

#### Rocky Flats Environmental Technology Site

#### PRE-DEMOLITION SURVEY REPORT (PDSR)

**Building 371** 

Phase II

Area AP / AF (Column Lines 12 - 15)

B371 Exterior, T376A, B376, T371K, and T371H, I, & J

**REVISION 1** 

March 9, 2005



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CLASSIFICATION REVIEW NOT REQUIRED PER EXEMPTION NUMBER CEX-005-02

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**ADMIN RECORD** 



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B371 Exterior, T376A, B376, T371K, and T371H, I, & J

### **REVISION 1**

March 9, 2005

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- V Data Quality Assessment
- W Historical Review
- X DOP Survey Area B Final Results

#### ABBREVIATIONS/ACRONYMS

ACM Asbestos Containing Material

Be Beryllium

CDPHE Colorado Department of Public Health and the Environment

DCGL<sub>EMC</sub> Derived Concentration Guideline Level – elevated measurement comparison

DCGL<sub>W</sub> Derived Concentration Guideline Level – Wilcoxon Rank Sum Test

D&D Decontamination and Decommissioning

DDCP Decontamination and Decommissioning Characterization Protocol

DOE U.S. Department of Energy
DPP Decommissioning Program Plan
Dot Overling Assessment

DQA Data Quality Assessment DQOs Data Quality Objectives

EPA U.S. Environmental Protection Agency
FDPM Facility Disposition Program Manual
HVAC Heating, Ventilation, Air Conditioning
HSAR Historical Site Assessment Report
HEUN Highly Enriched Uranyl Nitrate
IHSS Individual Hazardous Substance Site
IWCP Integrated Work Control Package

K-H Kaiser-Hill

LBGR Lower Bound of the Gray Region

LBP Lead-based paint LLW Low-level waste

MARSSIM Multi-Agency Radiation Survey and Site Investigation Manual

MDA Minimum Detectable Activity
MDC Minimum Detectable Concentration
NORM Naturally Occurring Radioactive Material

NRA Non-Rad-Added Verification

OSHA Occupational Safety and Health Administration

PARCC Precision, Accuracy, Representativeness, Comparability and Completeness

PCBs Polychlorinated Biphenyls PDS Pre-Demolition Survey

PDSR Pre-Demolition Survey Report

QC Quality Control

RCRA Resource Conservation and Recovery Act

RFCA Rocky Flats Cleanup Agreement

RFETS Rocky Flats Environmental Technology Site

RFFO Rocky Flats Field Office

RLC Reconnaissance Level Characterization

RLCR Reconnaissance Level Characterization Report

RSA Removable Surface Activity

RSOP RFCA Standard Operating Protocol RSP Radiological Safety Practices SVOCs Semi-Volatile Organic Compounds

TCLP Toxicity Characteristic Leaching Procedure

TSA Total Surface Activity

VOCs Volatile Organic Compounds

WSRIC Waste Stream and Residue Identification and Characterization

#### **EXECUTIVE SUMMARY**

A Pre-Demolition Survey was performed to enable compliant disposition and waste management of Building 371, Phase II areas for structural surfaces that exist within six feet of the final grade. Phase II areas covered in the scope of this report are Building 371 Area AP / AF (all interior surfaces located between column lines 12 through 15 from the basement level floor to the attic), B371 exterior, and T376A, B376, T371K, and T371H, I, & J (interior and exterior surfaces). This report also provides the radiological status of areas that exist greater than six feet below the final grade (sub-basement slab between column lines 12 - 15).

Because this area will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). The PDS encompassed both chemical and radiological characterization. The characterization was built upon physical, chemical and radiological hazards identified in the facility-specific *Reconnaissance Level Characterization Report for the 371/374 Building Cluster*, dated August 28, 2000, Revision 0.

Based upon the results of this Pre-Demolition Survey Report (PDSR), affected areas meet the unrestricted release limits specified in the site Pre-Demolition Survey Plan with the exception of items being dispositioned as radiological waste. This structure can be demolished and the waste managed as PCB Bulk Product waste or as sanitary waste, and the concrete can be used for backfill on-site per the RFCA RSOP for Recycling Concrete. Items to be removed as radiological waste during demolition include the following:

- Nine process drains located in the Room 4101 bermed area.
- Floor surfaces located in the bermed area located west of Stairwell #7 in Room 4101.

All remaining metal and equipment have received radiological surveys in accordance with RSP 7.02, *Contamination Monitoring Requirements*, and may be disposed of as sanitary waste. All indicated surveys are maintained in the applicable survey unit packages.

No removable contamination in excess of the unrestricted release limits (20 dpm/100 cm<sup>2</sup>) exists in Building 371, Phase II areas, and no beryllium contamination has been detected above the investigation level in these areas.

Radiological controls shall be in place during demolition of areas to be removed as radiological waste to ensure there is no release of contamination. These controls shall include the use of water and/or fixative for dust suppression, air sampling, and continuous RCT coverage. Air sampling shall include localized low-volume air monitors within the demolition zone and lapel air samplers for appropriate operators and support personnel.

The structural surfaces that exist greater than six feet below final grade that meet the established limits (less than 100 nCi/g surface, averaged over 1 m², and less than 7 nCi/g over the first 7 inches of concrete) will remain in place. All metal items will be removed during demolition and will not be used as backfill.

To ensure that the facility remains free of contamination and PDS data remain valid, Level 1 isolation controls are established.

#### 1 INTRODUCTION

A Pre-Demolition Survey was performed to enable compliant disposition and waste management of Building 371, Phase II areas for structural surfaces that exist within six feet of the final grade. Phase II areas include Building 371 Area AP / AF (all interior surfaces located between column lines 12 through 15 from the basement level floor to the attic), B371 exterior, and T376A, B376, T371K, and T371H, I, & J (interior and exterior surfaces). Because this Type 3 building will be demolished, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP). The results of this survey demonstrate that the structural concrete to be used for fill material meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan.

Data is also provided for structural surfaces that exist greater than 6' below final grade (sub-basement slab between column lines 12-15) to demonstrate compliance with the established limits (less than 100 nCi/g surface, averaged over 1 m², and less than 7 nCi/g over the first 7 inches of concrete). These areas were characterized per the *Building* 371/374 Project Characterization Plan, Rev. 0, dated December 12, 2004. This portion of the structure shall remain in place.

As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed. Among these is Building 371, Phase II. These structures no longer supports the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before this Type 3 facility can be demolished, the Data Quality Objectives (DQOs) for a Pre-Demolition Survey (PDS) must be satisfied; this document presents the PDS results for the indicated interior and exterior surfaces. The PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The PDS is built upon physical, chemical and radiological hazards identified in the facility-specific *Reconnaissance Level Characterization Report for the 371/374 Building Cluster*, dated August 28, 2000, Revision 0.

#### 1.1 PURPOSE

The purpose of this report is to communicate and document the results of Building 371, Phase II areas. A PDS is performed prior to building demolition to define the predemolition radiological and chemical conditions of a facility. The pre-demolition conditions are compared with the release limits for radiological and non-radiological contaminants. PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

#### 1.2 SCOPE

This report presents the pre-demolition radiological and chemical conditions of the all surfaces that will be free-released and used as backfill per the requirements of the RFETS, RFCA RSOP for Recycling Concrete. Also included in the scope of this report is the characterization of the structural surfaces that exist greater than six feet below final grade that were surveyed in accordance with the Building 371/374 Project Characterization Plan, Rev. 0, dated December 12, 2004.

#### 1.3 DATA QUALITY OBJECTIVES (FOR FREE RELEASE)

The Data Quality Objectives (DQOs) used in designing this PDS meet the minimum requirements specified in Section 2.0 of the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). Refer to section 2.0 of MAN-127-PDSP for these DQOs.

The DQOs for the areas that exist greater than 6' below final grade (sub-basement slab between column lines 12 - 15) are discussed in the *Building 371/374 Project Characterization Plan*, Rev. 0, dated December 12, 2004.

#### 1.3.1 The Problem

The problem involves determining whether or not the survey unit is suitable for unrestricted release in accordance with this plan.

#### 1.3.2 The Decision

The decision is verification that objectives specified in the decommissioning decision document have been met (e.g., certain materials meet unrestricted release criteria for radiological and non-radiological constituents).

#### 1.3.3 Inputs to the Decision

Inputs to the decision include the magnitude and location of data from preceding characterizations, including RLC and In-Process Characterization (IPC), PDS results, decision document action levels, and unrestricted release criteria.

#### 1.3.4 Decision Boundaries

The decision boundaries are the spatial confines of the facility, including rooms and sets of rooms, in two and three dimensions. Interior surfaces are included, including those below grade. Boundaries may be further defined in RFCA decision documents.

#### 1.3.5 Decision Rules

The following are decision rules to be used during PDS:

#### 1.3.5.1 Radionuclides

If all radiological survey and scan measurements are below the surface contamination guidelines specified in the Site PDSP, then the related areas and/or volume are considered not radiologically contaminated.

If any radiological survey or scan measurement exceeds the surface contamination guidelines provided in the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP), the related survey unit must be evaluated per the statistical tests described in Section 7.0, Data Analysis and Quality Assessment, of the PDSP.

#### 1.3.5.2 Hazardous Waste

If decommissioning waste is mixed with or contains a listed hazardous waste, or if the waste exhibits a characteristic of a hazardous waste, then the waste is considered RCRA-regulated hazardous waste in accordance with 6 CCR 1007-3, Parts 261 and 268.

#### 1.3.5.3 Hazardous Substances

If material contains a listed hazardous substance above a decision document action level (e.g., RFCA) and/or the CERCLA reportable quantity (40 CFR 302.4), the material is subject to CERCLA regulation (i.e., remediation and/or notification requirements).

#### 1.3.5.4 Beryllium

If surface concentrations of beryllium are equal to or greater than  $0.2 \,\mu\text{g}/100 \,\text{cm}^2$ , the material is considered beryllium contaminated per 10 CFR 850.

#### 1.3.5.5 PCBs

If material contains PCBs, in a non-liquid state, from the manufacturing process at concentrations ≥50 ppm, the material is considered PCB Bulk Product Waste and subject to the requirements of 40 CFR 761.

If PCB contamination from a past spill/release is suspected, or if a PCB spill is discovered that has not been cleaned up, the associated material is considered PCB Remediation Waste and subject to the requirements of 40 CFR 761. PCB remediation waste includes: materials disposed of prior to April 18, 1978, that are currently at concentrations ≥50 ppm PCBs, regardless of the concentration of the original spill; materials which are currently at any volume or concentration where the original source was ≥500 ppm PCBs beginning on April 18, 1978, or ≥50 ppm PCBs beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under 40 CFR 761.

If a waste or item contains PCBs in regulated concentrations, the waste or item is classified as PCB-regulated material and subject to the requirements of 40 CFR 761.

#### **1.3.5.6 Asbestos**

If any one sample of a sample set representing a homogeneous medium results in a positive detection (i.e., >1% by volume), then material is considered ACM (40 CFR 763 and 5 CCR 1001-10).

#### 1.3.6 Tolerable Limits on Decision Error

Acceptable false negative (a) errors for calculating the number of samples generally range from 1% to 10%. The default value specified by the Site PDSP is 5%, which was assumed for the survey design in this report.

#### 1.3.7 Optimization of Plan Design

Statistically based radiological surveying and sampling will be conducted per the guidance in Appendix B of the RFETS Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). Refer to Section 4.0 of the PDSP for direction of characterization of non-radiological, chemical constituents. For this report, the minimum number of measurement locations is fifteen per survey unit, as calculated based on the guidance in MAN-127-PDSP. Survey units will be typically sized in accordance with Section 3.1.1

of the PDSP (e.g., up to 100 m², floor surface area, for Class 1 survey units, 100 m² to 1,000 m², floor surface area, for Class 2 survey units, and up to 1,000 m², floor surface area, for Class 3 survey units). These size restrictions will typically be used as guidelines. If additional measurements are collected, larger floor surface areas may be used. For example, if an area is classified as a Class 1 and has 200 m² of floor surface area, then the number of measurements would be multiplied by 2 to account for the increased surface area. The DCGLw is 100 dpm/100 cm² for TSA and media measurements/samples, and 20 dpm/100 cm² for RSA measurements. The Lower Bound of the Gray Region (LBGR) was adjusted to obtain a relative shift of two (per the PDSP). The estimated standard deviation for each measurement type was calculated based on an assumed coefficient of variation of 30%.

The scan requirements for specific survey unit classifications are as follows:

Class 1: 100% of

100% of accessible surfaces

Class 2:

10-100% floors/lower walls

10-50% upper walls/ceilings

Class 3:

1-10% of all surfaces

#### 2 HISTORICAL SITE ASSESSMENT

A facility-specific Hazards Characterization Report was conducted to understand the facility history and related hazards. The Building 371 hazards characterization was conducted in August of 2000 (Reconnaissance Level Characterization Report for the 371/374 Building Cluster, dated August 28, 2000, Revision 0). Based on the characterization results, radiological contamination is suspect on the interior structural surfaces of the Building 371, Phase II areas. Therefore, media sampling was conducted on suspect painted surfaces, and media that possessed elevated activity was remediated from the interior of Building 371, Phase II (between column lines 12 – 15 from basement floor to attic). Paint located on wall and ceiling surfaces that did not contain elevated activity was allowed to remain in place.

The area included in the scope of this PDSR is referred to herein as Building 371, Phase II. The areas between column lines 12-15 were part of the original building 371 construction. This area housed the HVAC and utilities systems, a liquids laboratory (Room 3179), a waste shipping and receiving dock, a waste container staging area, a machine shop (Room 3157), a sheet metal and pipe shop (Room 3148), a paint shop (Room 3160), and an electrical shop (Room 3159). This area also was utilized as an administrative support area for Building 371 with offices located on the ground floor and basement levels.

Phase II also includes support trailers (T376A, T371K, and T371H, I, & J) and a support building (B376). These support trailers were always used as administrative office space for personnel supporting Building 371 operations. Building 376 was also a support facility that was primarily utilized as an administrative office area for personnel supporting the Building 371 mission. Building 376 was later converted to a storage area for general supplies and equipment used during D&D of Building 371.

A detailed description of these areas is provided in the *Reconnaissance Level Characterization Report for the 371/374 Building Cluster*, dated August 28, 2000, Revision 0. In addition, a detailed description of processes and equipment utilized in these areas is provided in the Historical Review provided in Attachment W.

The hazard characterization results and historical review (refer to Attachment W) were used to identify PDS data gaps and needs, and to develop radiological and chemical PDS characterization packages. Characterization documentation is located in the Building 371 Characterization Project files.

#### 3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

All surfaces included in the scope of this PDSR were characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern (weapons-grade plutonium isotopes). Based upon a review of the characterization data, historical and process knowledge, in-process survey data, building walk-downs, and the Site Pre-Demolition Survey Plan (MAN-127-PDSP), a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to survey unit packages indicated in this section). A survey unit overview map is presented in Attachment A. Based on hazard characterization data and historical and process knowledge, transuranic isotopes are the primary contaminants of concern in Buildings 371/374. Therefore, the PDS was performed to the transuranic PDS unrestricted release criteria. Individual radiological survey unit packages are maintained in the Building 371 Characterization Project files.

Approximately 150 square feet of contaminated concrete exists in a bermed area located west of Stairwell #7 in Room 4101. Due to the geometry and coating on the surface of this area, decontamination and sampling efforts of this area were hindered. As such, this area was considered radiologically contaminated (by default). Removing the floor area prior to demolition would be unusually difficult and would result in a considerable risk to the workers. Therefore, per agreement with the DOE and CDPHE, this bermed area west of Stairwell #7 in Room 4101 was painted with highly visible orange paint and will be removed during demolition. Affected concrete will be removed and disposed of as radiological waste during demolition. Highly visible orange paint has been applied to this area for identification purposes and contamination control during demolition. All affected surfaces have been surveyed to ensure removable contamination levels are less than 20 dpm/100 cm² (removable alpha).

Another bermed area located along the east wall of Room 4101 also possessed nine process drains with elevated radiological activity. These drains penetrate the east wall of Room 4101 and eventually delivered process liquids to tanks located in Building 374. The floor of this bermed area was remediated (i.e., dry shaved) during D&D activities. However, the removal of the process drains associated with this area would have resulted in a considerable risk to the workers. Therefore, per agreement with the DOE and CDPHE, the indicated process drains for the Room 4101 west bermed area will be

removed during demolition as radiological waste. Approximately 5 cubic yards of process drain metal and surrounding concrete exists as a part of this area. Remaining fixed contamination levels are typically less than 500 dpm / 100 cm² (fixed alpha), with limited areas up to 20,000 dpm/100 cm² (fixed alpha). Removable contamination levels have been verified to be less than 20 dpm/100 cm² (removable alpha). The drains have been grouted shut, and highly visible orange paint has been applied to this area for identification purposes and for contamination control during demolition.

Areas covered in the scope of this PDSR consists of one Class 1 survey unit (371073), six Class 2 survey units (371023, 371039, 371058, 371074, 371081, and 371087), and twelve Class 3 survey units (371001, 371002, 371003, 371004, 371005, 371008, 371046, 371053, 371056, 371057, 371065, and 371066) based on the contamination potential, per Section 3.0 of the PDSP.

All associated survey unit packages were developed in accordance with Radiological Safety Practices (RSP) 16.01, Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure. Total surface activity (TSA) and removable surface activity (RSA) measurements were collected in accordance with RSP 16.02 Radiological Surveys of Surfaces and Structures. Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, Radiological Survey/Sample Data Analysis. Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, Radiological Survey/Sample Quality Control.

Media sampling was not conducted in the Class 1 survey unit due to all media being removed due to process history of the area. Media sampling was conducted in Class 2 survey units on surfaces where contamination was suspect in the paint. All media sampling was conducted to confirm that no contamination was present in the paint, and therefore, was to be left in place. Samples were analyzed using standard gamma spectroscopy techniques (e.g., Canberra ISOCS system) for Americium-241. Total transuranic alpha activity was then determined using established ratios from Table 2 of Technical Basis Document 00188, *Technical Basis for Media Samples*, dated February 5, 2003. The summation of activity was calculated by adding the individual activities of each nuclide (e.g., Am-241, Pu-239, and Pu-240) and converting each measurement to dpm/100 cm². Each summation was then compared to the applicable transuranic alpha limit.

Random survey locations that landed on inaccessible areas were relocated as close to the original location as possible within the contiguous square-meter. When this was not possible, a new random location was selected from a random-number generator.

Radiological survey data, statistical analysis results, survey locations, and radiological scan maps are presented in Attachments B through T, Radiological Data Summary and Survey Maps.

Table 1 below provides the breakdown of survey units for this PDSR relative to building surfaces covered in the scope of this report. This table covers the survey unit number, classification, survey unit description, and justification for classification for each survey unit.

# Table 1 Building 371 (Phase II) Survey Unit Breakdown

Survey	Class	Survey Unit Description / Justification for Classification
Unit		
371001	3	Interior of T376A / Administrative Area / Area not expected to contain levels of
		residual radioactivity, or expected to contain residual radioactivity at a small fraction
		of the DCGL <sub>w</sub> .
371002	3 .	Interior of B376 / Administrative and Supply Storage Area / Area not expected to
0,111		contain levels of residual radioactivity, or expected to contain residual radioactivity at
		a small fraction of the DCGL <sub>w</sub> .
371003	3	Interior of T371K / Administrative area / Area not expected to contain levels of
• ,	_	residual radioactivity, or expected to contain residual radioactivity at a small fraction
		of the DCGL <sub>w</sub> .
371004	3	Interior of T371H, I, & J / Administrative area / Area not expected to contain levels of
		residual radioactivity, or expected to contain residual radioactivity at a small fraction
,		of the DCGL <sub>W</sub> .
371005	3	Exterior of T376A, B376, T371K, and T371H, I, & J / Administrative area / Area not
		expected to contain levels of residual radioactivity, or expected to contain residual
		radioactivity at a small fraction of the DCGL <sub>W</sub> .
371008	3	Exterior of Building 371 / Area not expected to contain levels of residual radioactivity,
		or expected to contain residual radioactivity at a small fraction of the DCGL <sub>w</sub> .
371023	. 2	Rooms 3187A/B & 3189 (All Surfaces) / Shipping & Receiving Room and Waste
		Storage Area / Area had, prior to remediation, a potential radioactive contamination or
		known contamination, but is not expected to exceed the DCGL <sub>w</sub> .
371039	2	Dock 18T (Floor Only) / Shipping & Receiving Dock of Waste Containers / Area had,
		prior to remediation, a potential radioactive contamination or known contamination,
		but is not expected to exceed the DCGL <sub>W</sub> .
371046	3	Room 3191 (All Surfaces) / Utility Support Area with no history of contamination /
		Area not expected to contain levels of residual radioactivity, or expected to contain
		residual radioactivity at a small fraction of the DCGL <sub>W</sub> .
371053	3	Ground Level - Column Lines 12 - 15 (All Surfaces) / Maintenance Shop, Electrical
		Shop, Machine Shop, Paint Shop, & Administrative Areas / Area not expected to
		contain levels of residual radioactivity, or expected to contain residual radioactivity at
		a small fraction of the DCGL <sub>w</sub> .
371056	3	Stairwells #6 & #7 (All Surfaces within 6' below final grade) / Administrative Support
		Area Stairwells (Never posted as a Contamination Area) / Area not expected to contain
		levels of residual radioactivity, or expected to contain residual radioactivity at a small
		fraction of the DCGL <sub>W</sub> .
371057	3 .	Room 3185 (All Surfaces) / Steam Room & Utility Area (Never posted as a
		Contamination Area) / Area not expected to contain levels of residual radioactivity, or
		expected to contain residual radioactivity at a small fraction of the DCGL <sub>w</sub> .
371058	2	Elevator #1 (All Surfaces within 6' below grade) / Main Elevator for waste removal
		from B371 process areas (No history of spills) / Area had, prior to remediation, a
		potential radioactive contamination or known contamination, but is not expected to
		exceed the DCGL <sub>W</sub> .
371065	3	Basement Level – Column Lines 12 – 15 (All Surfaces) Excluding Room 2101 / Utility
		& Administrative Support Area (No history of spills) / Area not expected to contain
		levels of residual radioactivity, or expected to contain residual radioactivity at a small
		fraction of the DCGL <sub>w</sub> .
371066	3	Rooms 4101 through 4106 (All Surfaces) Excluding east bermed area / Supply
		Chemical Storage Area (No history of contamination and never posted as a
		Contamination Area) / Small area west of Stairwell #7 being removed as radiological
÷		waste (by default) / Area not expected to contain levels of residual radioactivity, or
•		expected to contain residual radioactivity at a small fraction of the DCGL <sub>w</sub> .

## Table 1 Building 371 (Phase II) Survey Unit Breakdown (cont.)

Survey	Class	Survey Unit Description / Justification for Classification
Unit		
371073	1	Room 4101 East Bermed Area (Floor Only) / History of associated process drains
		being used to dispose of low level contaminated liquids to tanks in Building 374 for
		treatment / Area had, prior to remediation, a potential for radioactive contamination, or
		known contamination above the DCGL <sub>w</sub> .
371074	2	Room 3168 (All Surfaces) / Decontamination Room for Building 374 (History of low
ŀ		level removable contamination of floors / Room kept very clean after any operation
		requiring use / Area had, prior to remediation, a potential radioactive contamination or
		known contamination, but is not expected to exceed the DCGL <sub>w</sub> .
371081	2	Room 2101 (All Surfaces) / Utility Support Area for Building 371 (Spills occurred on
		floor surfaces during D&D stripout and remediated) / Area had, prior to remediation, a
		potential radioactive contamination or known contamination, but is not expected to
		exceed the DCGL <sub>w</sub> .
371087	2	Rooms 2335, 2335A, 2335B, 2335C, & 2337 (All Surfaces) / Decontamination Room
		for Building 371 Basement Level (History of low level removable contamination of
		floors / Room kept very clean after any operation requiring use / Area had, prior to
		remediation, a potential radioactive contamination or known contamination, but is not
		expected to exceed the DCGL <sub>w</sub> .

#### T376A (Interior) - Survey Unit 371001

The interior surfaces of T376A are classified as a Class 3 survey unit. The exterior surfaces of T376A are addressed in another survey unit. A total of 15 random TSA and RSA measurements were collected on interior surfaces. Surface scans of 44 m<sup>2</sup> (10% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371001 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371001 are presented in Attachment B, Survey Unit 371001, Radiological Data Summary and Survey Map.

#### B376 (Interior) - Survey Unit 371002

The interior surfaces of B376 are classified as a Class 3 survey unit. The exterior surfaces of B376 are addressed in another survey unit. A total of 15 random TSA and RSA measurements were collected on interior surfaces. Surface scans of 54 m<sup>2</sup> (6% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371002 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371002 are presented in Attachment C, Survey Unit 371002, Radiological Data Summary and Survey Map.

#### T371K (Interior) – Survey Unit 371003

The interior surfaces of T371K are classified as a Class 3 survey unit. The exterior surfaces of T371K are addressed in another survey unit. A total of 15 random TSA and RSA measurements were collected on interior surfaces. Surface scans of 54 m<sup>2</sup> (8% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371003 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371003 are presented in Attachment D, Survey Unit 371003, Radiological Data Summary and Survey Map.

#### T371 H, I, & J (Interior) - Survey Unit 371004

The interior surfaces of T371 H, I, & J are classified as a Class 3 survey unit. The exterior surfaces of T371 H, I, & J are addressed in another survey unit. A total of 15 random TSA and RSA measurements were collected on interior surfaces. Surface scans of 117 m<sup>2</sup> (13% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371004 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371004 are presented in Attachment E, Survey Unit 371004, Radiological Data Summary and Survey Map.

#### T376A, B376, T371K, and T371 H, I, & J (Exterior) - Survey Unit 371005

The exterior surfaces of T376A, B376, T371K, and T371 H, I, & J are classified as a Class 3 survey unit. The interior surfaces of these structures are addressed in other survey units. A total of 15 random TSA and RSA measurements were collected on interior surfaces. Surface scans of 201 m<sup>2</sup> (10% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371005 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371005 are presented in Attachment F, Survey Unit 371005, Radiological Data Summary and Survey Map.

#### **B371 Exterior – Survey Unit 371008**

The exterior surfaces of Building 371 are classified as a Class 3 survey unit. The applicable interior surfaces of Building 371 included in the scope of this report are addressed in other survey units. A total of 158 random TSA and RSA measurements were collected on exterior surfaces. Surface scans of 829 m<sup>2</sup> (5% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

Dock 5, located on the east side of Building 371, was surveyed in accordance with the B371/374 Decommissioning Operations Plan and the Pre-Demolition Survey Plan. During demolition activities on Phase I (Building 374), a portion of Dock 5 created an impediment to completion of demolition. As a result, a portion of the dock was detached. The concrete will be recycled and the structural metal (e.g., rebar) will be dispositioned as sanitary waste. This approach was discussed and approved in a contact record with the CDPHE (dated March 8, 2005).

All scans and surveys in survey unit 371008 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371008 are presented in Attachment G, Survey Unit 371008, Radiological Data Summary and Survey Map.

#### Rooms 3187A, 3187B, & 3189 (All Surfaces) - Survey Unit 371023

All surfaces (floors, walls, and ceilings) located in Rooms 3187A, 3187B, and 3189 are classified as a Class 2 survey unit. A total of 16 random TSA and RSA measurements were collected. Surface scans of 650 m<sup>2</sup> (100% of accessible floor surfaces, 32% of lower wall surfaces, and 17% of upper wall and ceiling surfaces) were performed. A total of 15 media samples were collected on surfaces where paint was present. All media samples taken for this survey unit were below the applicable release limit; therefore, no media removal was necessary.

All scans and surveys in survey unit 371023 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371023 are presented in Attachment H, Survey Unit 371023, Radiological Data Summary and Survey Map.

#### Dock 18T (Floor) - Survey Unit 371039

The floor surfaces of Dock 18T are classified as a Class 2 survey unit. A total of 15 random TSA and RSA measurements were collected. Surface scans of 55 m<sup>2</sup> (56% of accessible surfaces) were performed. No media was present on the floor of Dock 18T; therefore, no media sampling was performed.

All scans and surveys in survey unit 371039 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371039 are presented in Attachment I, Survey Unit 371039, Radiological Data Summary and Survey Map.

#### Room 3191 (All Surfaces) – Survey Unit 371046

All surfaces (floors, walls, and ceilings) located in Room 3191 are classified as a Class 3 survey unit. A total of 15 random TSA and RSA measurements were collected. Surface scans of 52 m<sup>2</sup> (23% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371046 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371046 are presented in Attachment J, Survey Unit 371046, Radiological Data Summary and Survey Map.

#### Ground Level - Column Lines 12 - 15 (All Surfaces) - Survey Unit 371053

All surfaces (floors, walls, and ceilings) located on the ground level between column lines 12 – 15 are classified as a Class 3 survey unit. A total of 17 random TSA and RSA measurements were collected. Surface scans of 686 m<sup>2</sup> (13% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371053 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371053 are presented in Attachment K, Survey Unit 371053, Radiological Data Summary and Survey Map.

#### Stairwells #6 & #7 (All Surfaces) - Basement Level and Above - Survey Unit 371056

Stairwells #6 and #7 are classified as a Class 3 survey unit. These areas provide access to the administrative and utility areas located in Phase II and were never posted as a radiological area. A total of 15 random TSA and RSA measurements were collected. Surface scans of 277 m<sup>2</sup> (30% of accessible surfaces) were performed. No media sampling was required for this Class 3 survey unit.

All scans and surveys in survey unit 371056 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371056 are presented in Attachment L, Survey Unit 371056, Radiological Data Summary and Survey Map.

#### Room 3185 (All Surfaces) – Survey Unit 371057

Room 3185 (floors, walls, and ceilings) is classified as a Class 3 survey unit. A total of 15 random TSA and RSA measurements were collected. Surface scans of 138 m<sup>2</sup> (21% of accessible surfaces) were performed. No media sampling was required for this Class 3 survey unit.

All scans and surveys in survey unit 371057 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371057 are presented in Attachment M, Survey Unit 371057, Radiological Data Summary and Survey Map.

#### Elevator #1 (All Surfaces) - Basement Level and Above - Survey Unit 371058

The elevator shaft located in Area AP / AF is classified as a Class 2 survey unit. A total of 16 random TSA and RSA measurements were collected. Surface scans of 82 m<sup>2</sup> (29% of accessible surfaces) were performed. No paint was located on the structural surfaces; therefore, no media samples were collected for this survey unit. The elevator will be removed during demolition as sanitary waste.

All scans and surveys in survey unit 371058 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371058 are presented in Attachment N, Survey Unit 371058, Radiological Data Summary and Survey Map.

#### Basement Level - Column Lines 12-15 - (All Surfaces) - Survey Unit 371065

All surfaces (floors, walls, and ceilings) located on the basement level between column lines 12 – 15 are classified as a Class 3 survey unit. A total of 19 random TSA and RSA measurements were collected. Surface scans of 891 m<sup>2</sup> (15% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371065 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371065 are presented in Attachment O, Survey Unit 371065, Radiological Data Summary and Survey Map.

#### Rooms 4101, 4102, 4103, 4104, 4105, & 4106 (All Surfaces) - Survey Unit 371066

All surfaces (floors, walls, and ceilings) located on the ground level between column lines 12 – 15 are classified as a Class 3 survey unit. The bermed area located on the east wall of Room 4101 is covered in another survey unit. The small, bermed area located west of Stairwell #7 had a thick poly coating that proved very difficult to penetrate for sampling or remediation activities. Therefore, per agreement with the CDPHE, this area was considered radiologically contaminated (by default) and will be dispositioned as radiological waste during demolition. Fixative (i.e., highly visible orange paint) has been applied to the affected area, and this concrete will be removed during demolition. A total of 15 random TSA and RSA measurements were collected. In addition, 10 biased RSA and TSA measurements were performed. Surface scans of 436 m<sup>2</sup> (13% of accessible surfaces) were performed. No media samples were collected for this Class 3 survey unit (per the PDSP, no media samples are required in Class 3 survey units due to process history).

All scans and surveys in survey unit 371066 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371066 are presented in Attachment P, Survey Unit 371066, Radiological Data Summary and Survey Map.

#### Rooms 4101 (East Bermed Area) - Survey Unit 371073

The floors of the east bermed area located in Room 4101 are classified as a Class 1 survey unit. A total of 22 random TSA and RSA measurements were collected. Surface scans of 142 m<sup>2</sup> (100% of accessible surfaces) were performed. All media was removed from surfaces in this survey unit; therefore, no media sampling was conducted.

This bermed area possesses nine process drains with elevated radiological activity. These drains penetrate the east wall of Room 4101 and eventually delivered process liquids to tanks located in Building 374. The floor of this bermed area was remediated (i.e., dry shaved) during D&D activities. However, the removal of the process drains associated with this area would have resulted in a considerable risk to the workers. Therefore, per agreement with the DOE and CDPHE, the indicated process drains for the Room 4101 west bermed area will be removed during demolition as radiological waste.

Approximately 5 cubic yards of process drain metal and surrounding concrete exists as a part of this area. Remaining fixed contamination levels are typically less than 500 dpm / 100 cm<sup>2</sup> (fixed alpha), with limited areas up to 20,000 dpm/100 cm<sup>2</sup> (fixed alpha).

Removable contamination levels have been verified to be less than 20 dpm/100 cm<sup>2</sup> (removable alpha). The drains have been grouted shut, and highly visible orange paint has been applied to this area for identification purposes and for contamination control during demolition.

All scans and surveys in survey unit 371073 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371073 are presented in Attachment Q, Survey Unit 371073, Radiological Data Summary and Survey Map.

#### Rooms 3168 (All Surfaces) - Survey Unit 371074

All surfaces located in Room 3168 are classified as a Class 2 survey unit. A total of 16 random TSA and RSA measurements were collected. Surface scans of  $38m^2$  (100% of accessible floor surfaces, 34% lower walls, 60% upper walls and ceiling) were performed. An inspection of the surfaces of this survey unit indicated all paint was original, and no areas of elevated activity were identified during scans; therefore, no media samples were required for this survey unit.

All scans and surveys in survey unit 371074 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371074 are presented in Attachment R, Survey Unit 371074, Radiological Data Summary and Survey Map.

### Rooms 2101 (All Surfaces) - Survey Unit 371081

All surfaces located in Room 2101 are classified as a Class 2 survey unit. A total of 15 random TSA and RSA measurements were collected. A total of 15 media samples were collected on surfaces where paint was present (walls and ceilings). All media samples taken for this survey unit were below the applicable release limit; therefore, no media removal was necessary. During D&D, a known spill occurred on the floor of Room 2101 during piping stripout. The affected areas (southwest corner and east side of the room) were remediated and a 100 percent scan of accessible surfaces was performed of the entire floor. No other floor surfaces had media present and no contamination was identified; therefore, no remediation was required. Remaining wall and ceiling surfaces received scans consistent with Class 2 scan requirements. Surface scans of 562m<sup>2</sup> (100% of accessible floor, 34% of lower walls, 12% upper walls and ceiling) were performed.

All scans and surveys in survey unit 371081 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371081 are presented in Attachment S, Survey Unit 371081, Radiological Data Summary and Survey Map.

## Rooms 2335, 2335A, 2335B, 2335C, & 2337 (All Surfaces) - Survey Unit 371087

All surfaces located in Rooms 2335, 2335A, 2335B, 2335C, and 2337 are classified as a Class 2 survey unit. A total of 18 random TSA and RSA measurements were collected. Surface scans of 72 m<sup>2</sup> (100% of accessible floor surfaces and 25% wall and ceiling surfaces) were performed. An inspection of the surfaces of this survey unit indicated all paint was original and no areas of elevated activity were identified during scans; therefore, no media samples were required for this survey unit.

All scans and surveys in survey unit 371087 were less than the applicable PDS transuranic DCGL values. Radiological survey data, statistical analysis results, survey locations, and radiological scan maps for survey unit 371087 are presented in Attachment T, Survey Unit 371087, Radiological Data Summary and Survey Map.

#### Area AN / AF (Surfaces Greater than 6 Feet Below Final Grade) - Survey Area B

Surfaces that exist greater than 6' below final grade (sub-basement areas only for this PDSR) were characterized per the requirements of the *Building 371/374 Project Characterization Plan*, dated December 12, 2004. The structural surfaces that exist greater than six feet below final grade that meet the established limits (less than 100 nCi/g surficial, averaged over 1 m², and less than 7 nCi/g over the first 7 inches of concrete) will remain in place. A total of 15 random and 5 biased *insitu* gamma spectroscopy shots were taken in this survey area. Survey Area B slab also received a 100% scan with a Ludlum Model 2350-1 ratemeter with a 44-17 NaI probe to verify no areas exceeded specified limits.

All activity detected with portable instrumentation was considered as being DOE enhanced material (i.e., instrument background was not subtracted from the gross measurements). No areas exceeding the established surface limits (100 nCi/g, averaged over 1 m²) or volumetric limits (7 nCi/g) were identified in this area; therefore, no remediation was necessary. As such, no post remediation data is included as a part of this PDSR (as required in Section 10.0 of the B371/374 Characterization Plan). All surfaces in Survey Area B received removable contamination surveys as a part of down posting to a Radiological Buffer Area. All results were less than 10 dpm/100 cm². Indicated surveys are included in Attachment X.

The estimated grams of weapons-grade plutonium (WGPu) remaining in Survey Area B is 3.6 E-5 grams (refer to Attachment X). This value was calculated based on the results of the gamma spectroscopy *insitu* measurements performed. A summary of DOP data is included in Attachment X.

#### 4 CHEMICAL CHARACTERIZATION AND HAZARDS

Based on a thorough review of historical and process knowledge, visual inspections, and personnel interviews, no additional chemical hazard sampling requirements were identified.

#### 4.1 Asbestos

Asbestos containing building material is not present in or on areas covered in the scope of this report (previously removed), with the exception of a ACM in the tar impregnated roofing felt located on the roof of B371. This ACM will be removed from the rubble during demolition and disposed of as sanitary waste.

#### 4.2 Beryllium (Be)

Areas covered in the scope of this report are not and have never been a beryllium-controlled area. None of these areas were included on the RFETS Historical Beryllium List. Per the Beryllium Sampling Decision Tree in the PDSP, the number of different locations and the square footage of the areas, 121 Be swipes were collected at biased locations on floor and elevated horizontal surfaces. Samples were collected in accordance

with the PDSP and the *Beryllium Characterization Procedure*, PRO-536-BCPR, Revision 0, September 9, 1999.

All beryllium smear sample results were less than the investigative limit of  $0.1 \, \mu g/100 \, \text{cm}^2$ . PDS beryllium laboratory sample data and location maps are contained in Attachment U, Chemical Data Summaries and Sample Maps.

## 4.3 RCRA/CERCLA Constituents [including Metals and Volatile Organic Compounds (VOCs)]

Based upon the Reconnaissance Level Characterization Report for the 371/374 Building Cluster, dated August 28, 2000, Revision 0, personnel interviews, facility walk-downs, and historical process knowledge (WSRIC/WEMS), only one room in Phase II of Building 371 previously managed hazardous wastes. Specifically, Room 3189 was a previously permitted hazardous waste container storage unit. This room has been closed in accordance with the 371/374 Decommissioning Operations Plan (DOP). This determination was documented in a contact record dated December 21, 2004. The concrete generated from the demolition of the areas included in the scope of this report can be used for onsite recycling in accordance with the Concrete Recycling RSOP.

All RCRA regulated items have been removed (in accordance with the B371 DOP).

#### 4.4 Polychlorinated Biphenyls (PCBs)

Based on historical knowledge, personnel interviews, and 371/374 Environmental Compliance Personnel walk-downs, Building 374 never used/transferred free flowing/exposed PCB's. At one time the facility may have used PCB ballasts in its fluorescent light fixtures, however, all of these have been removed, and compliantly disposed of, resulting in no impact on demolition activities in this area.

#### 5 PHYSICAL HAZARDS

Physical hazards associated with Building 371, Phase II areas are common to standard industrial environments. Several large floor penetrations exist that have been covered and/or barricaded (following survey) to avoid fall hazards. In addition, auxiliary lighting is required for access to the area.

Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

#### 6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of areas included in the scope of this report, and consequent waste management, is of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments B through U) were verified and validated relative to MAN-127-PDSP, Pre-Demolition Survey Plan for D&D Facilities, and original project DQOs.

In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- the number of samples and surveys
- ♦ the types of samples and surveys
- the sampling/survey process as implemented "in the field"
- the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are presented in Attachment V. The DQA Checklists are provided in the individual survey unit packages (located in the Building 371 Characterization Files).

The Minimum Detectable Activity (MDA) for each PDS instrument was determined a priori based on typical parameters (background, efficiency, and count time). A list of radiological field instrumentation and associated sensitivities is presented in Table 2.

Table 2
PDS Radiological Field Instrumentation and Minimum Detectable Activities

Model	Measurement Type	MDA (dpm/100 cm <sup>2</sup> )	
NE Electra DP6	TSA	48	
Eberline SAC-4	Removable (Smears)	10	
NE Electra AP6	Scans	300	
Bartlett FSM	Scans	225	

#### 7 DECOMMISSIONING WASTE TYPES

The demolition and disposal of Building 371, Phase II areas will generate a variety of wastes. Structural surfaces that exist within 6' of final grade that do not meet unrestricted release limits shall be packaged as radiological waste. These areas shall be delineated with orange paint, such that they can be easily identified during demolition for segregation and packaging.

The remaining concrete can be used as backfill onsite in accordance with the RFCA RSOP for Recycling Concrete. The portions of the structure that exist beneath the 6' grade line can remain in place because they meet the established limits (less than 100 nCi/g at the surface, averaged over 1 m², and less than 7 nCi/g over the first 7 inches of concrete) (refer to Attachment X). The estimated grams of weapons-grade plutonium (WGPu) remaining in Building 371, Phase II areas is 3.6 E-5 grams (refer to Attachment X).

The estimated volume of radiological waste to be generated for this area is 150 cubic yards. This includes concrete that does not meet the unrestricted release limits and the nine process drains located in Room 4101.

Asbestos containing building material is not present in or on areas covered in the scope of this report (previously removed), with the exception of ACM in the tar impregnated roofing felt located on the roof of B371. This ACM will be removed from the rubble during demolition and disposed of as sanitary waste.

Specific waste volumes are generically itemized in Table 3 below:

Table 3

Waste Volume Estimates and Material Types, Phase II, Building 371							
Facility	Concrete (ft³)¹	Wood (ft³)	Metal (ft³)	Wall Board (ft³)	ACM (ft³)	Other Waste (ft³)	
371 Phase II	3,300	600	26,000	865	8,100	Re-bar - 500	

(1) A majority of indicated concrete will be used as backfill in the basement of Building 371. Any remaining concrete painted with high visibility orange paint will be packaged as radiological waste.

#### 8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, Building 371, Phase II areas are classified as an RFCA Type 3 facility pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999). Based upon the results of this PDSR, the Building 371 structure between column lines 12 and 15 meets the unrestricted release limits specified in the site Pre-Demolition Survey Plan and is ready for demolition. The bermed area located west of Stairwell #7 in Room 4101 (radiologically contaminated by default) and the nine process drains located on the east side of Room 4101 do not meet unrestricted release limits and will be packaged as radiological waste during demolition. The structural surfaces that exist beneath the 6' grade line meet the established limits (less than 100 nCi/g at the surface, averaged over 1 m², and less than 7 nCi/g over the first 7 inches of concrete); therefore, can remain in place (refer to Attachment X). The PDS for Building 371, Phase II was performed in accordance with the DDCP and PDSP, all PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. All remaining metal and equipment have received radiological surveys in accordance with RSP 7.02, Contamination Monitoring Requirements, and may be disposed of as sanitary waste. All indicated surveys are maintained in the applicable survey packages.

A facility walkdown and historical review indicates that no RCRA/CERCLA constituents exist in the areas included in the scope of this PDSR (refer to Attachment W, Historical Review). Any surfaces with highly visible orange paint that are generated during demolition will be disposed of as radiological waste.

Radiological contamination in excess of the PDSP Table 7-1 limits was not detected in Building 371, Phase II areas (with the exception of the areas discussed in Section 3.0 that will be removed as radiological waste). The applicable limits are indicated in Table 4 below as follows:

**Table 4**PDSP Table 7-1 Surface Contamination Limits

Radionuclides	Total Average (dpm/100 cm <sup>2</sup> ) (1) (DCGL <sub>W</sub> )	Total Maximum (dpm/100 cm²) (2) (DCGL <sub>EMC</sub> )	Removable (dpm/100 cm²) (DCGL <sub>W</sub> )
Transuranics	100	300	20

1) Measurements of average contamination should not be averaged over an area of more than 1 m<sup>2</sup>.

(2) The maximum contamination level applies to an area of not more than 100 cm<sup>2</sup>.

Based upon this PDSR, Building 371, Phase II can be demolished and concrete can be used for backfill on-site per the RFCA RSOP for Recycling Concrete. Exceptions include the items/areas discussed in Section 3.0 that do not meet unrestricted release limits. These items/areas shall be removed and packaged as radiological waste during demolition.

The portions of the structure that exist beneath the 6' grade line can remain in place because they meet the established limits (less than 100 nCi/g at the surface, averaged over 1 m², and less than 7 nCi/g over the first 7 inches of concrete). These areas have also been verified to be less than 20 dpm/100 cm² (removable alpha) to prevent the release of contamination during demolition activities. No removable contamination in excess of the unrestricted release limits (20 dpm/100 cm²) exists in these areas. No beryllium contamination has been detected above the investigation level in Building 371, Phase II areas.

In addition, radiological controls shall be in place during demolition to assure there is no release of contamination while removing contaminated portions of the facility. These controls shall include the use of water and/or fixative for dust suppression, air sampling, and continuous RCT coverage. Air sampling shall include localized low-volume air monitors within the demolition zone and lapel air samplers for appropriate operators and support personnel.

The contaminated areas will be carefully removed during demolition activities. A bright-colored, orange paint will be used to allow for visible detection of these areas by operators and waste personnel. In the event painted debris becomes mixed with the areas of concrete that have been free-released, these portions will be dispositioned as radiological waste to the extent practicable (i.e., all debris where paint is visible and any areas where contaminated concrete may have mixed with areas of concrete that have been free-released). All attempts will be made to minimize mixing of clean and contaminated concrete during demolition.

To ensure that the facility remains free of contamination and that PDS data remain valid, Level 1 isolation controls have been established.

#### 9 REFERENCES

Reconnaissance Level Characterization Report for the 371/374 Building Cluster, dated August 28, 2000, Revision 0.

DOE/RFFO, CDPHE, EPA, 1996. Rocky Flats Cleanup Agreement (RFCA), July 19, 1996.

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K-H, 1999. Decommissioning Program Plan, June 21, 1999.

MAN-131-QAPM, Kaiser-Hill Team Quality Assurance Program, Rev. 1, November 1, 2001.

MAN-076-FDPM, Facility Disposition Program Manual, Rev. 3, January 1, 2002.

MAN-077-DDCP, Decontamination and Decommissioning Characterization Protocol, Rev. 4, July 15, 2002.

MAN-127-PDSP, Pre-Demolition Survey Plan for D&D Facilities, Rev. 1, July 15, 2002.

MARSSIM - Multi-Agency Radiation Survey and Site Investigation Manual (NUREG-1575, EPA 402-R-97-016).

PRO-475-RSP-16.01, Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure, Rev. 1, May 22, 2001.

PRO-476-RSP-16.02, Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures, Rev. 2, March 10, 2003.

PRO-477-RSP-16.03, Radiological Samples of Building Media, Rev. 1, May 22, 2001.

PRO-478-RSP-16.04, Radiological Survey/Sample Data Analysis for Final Status Survey, Rev. 1, May 22, 2001.

PRO-479-RSP-16.05, Radiological Survey/Sample Quality Control for Final Status Survey, Rev. 1, May 22, 2001.

PRO-563-ACPR, Asbestos Characterization Procedure, Revision 0, August 24, 1999.

PRO-536-BCPR, Beryllium Characterization Procedure, Revision 0, August 24, 1999.

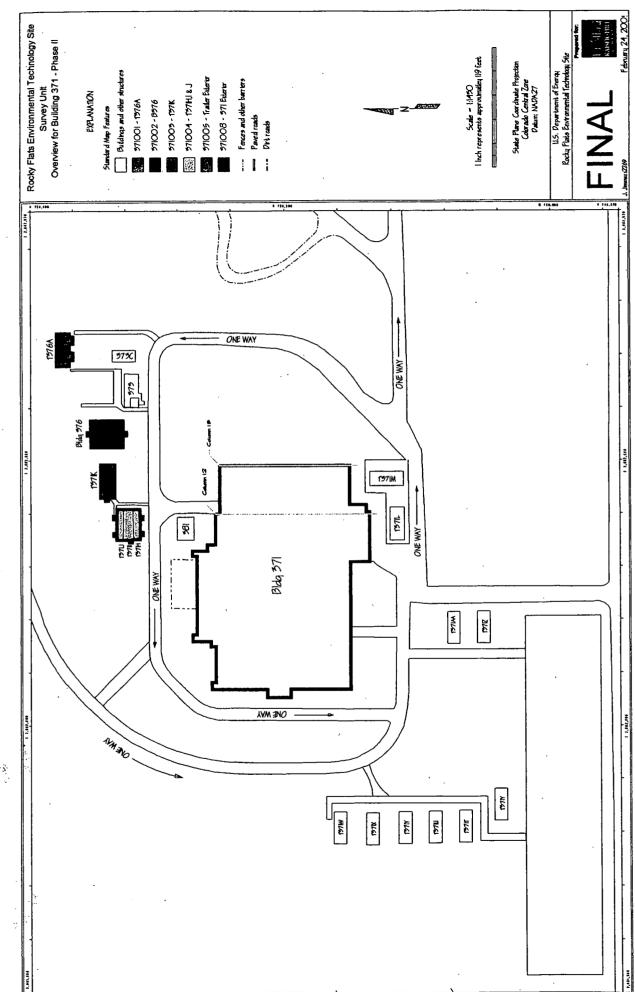
RFETS, Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition.

RFETS, Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal.

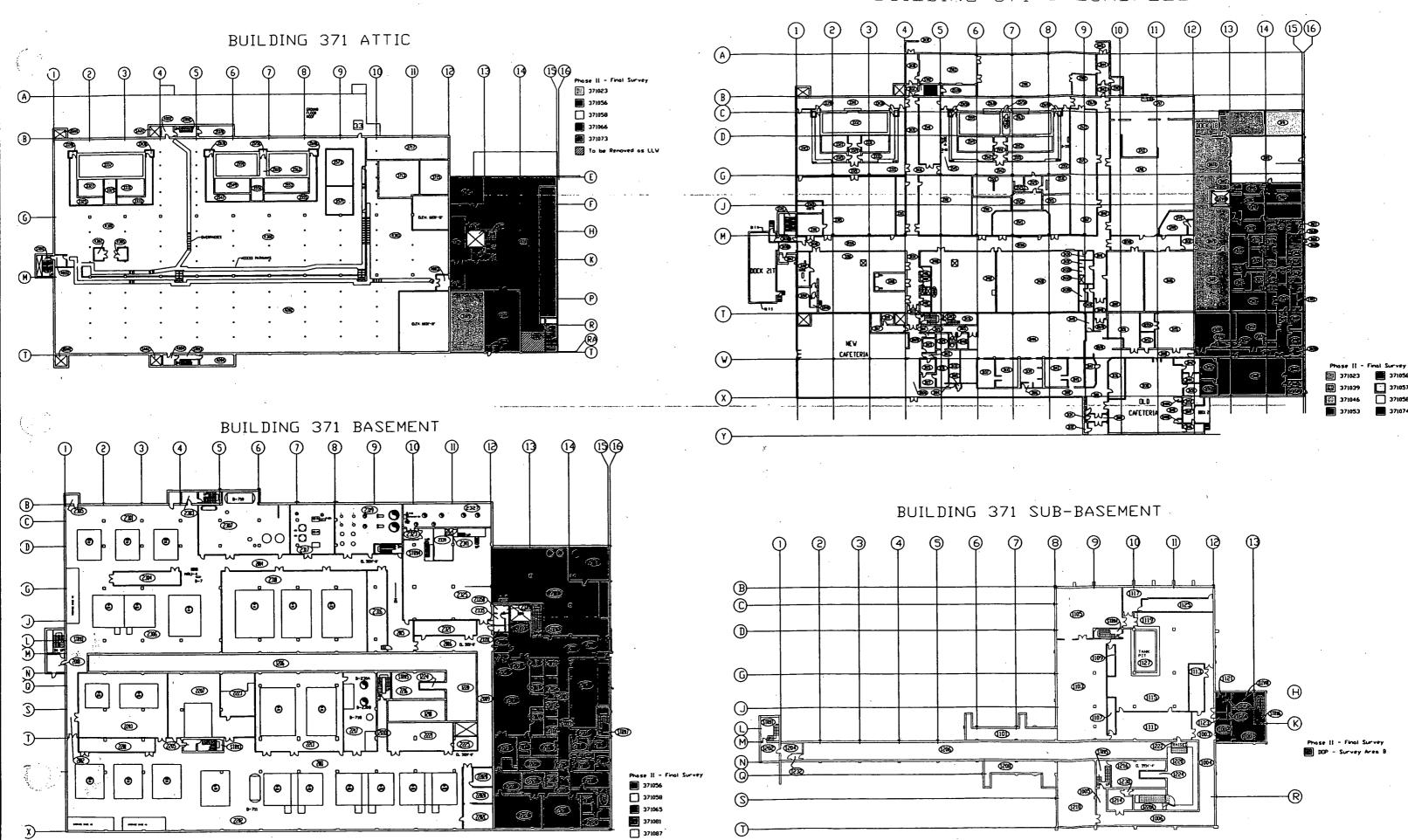
\*\*RFETS, RFCA RSOP for Recycling Concrete, September 28, 1999.

## ATTACHMENT A

Survey Unit Overview Map



## BUILDING 371 GROUNDFLOOR



## **ATTACHMENT B**

Survey Unit 371001

Radiological Data Summary and Survey Map

Survey Area: AQ

Survey Unit: 371001

Building: 371

iscription: Trailer T376A (INTERIOR)

## **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

#### **Alpha**

Maximum:

27.8 dpm/100cm<sup>2</sup>

Minimum:

-11.1 dpm/100cm<sup>2</sup>

Mean:

6.8 dpm/100cm<sup>2</sup>

Standard Deviation:

QC Maximum:

7.4 dpm/100cm<sup>2</sup>

QC Minimum:

1.6 dpm/100cm<sup>2</sup>

QC Mean:

4.5 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

#### Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

#### **Alpha**

Maximum:

11.2 dpm/100cm<sup>2</sup>

Minimum:

-0.9 dpm/100cm<sup>2</sup>

Mean:

1.1 dpm/100cm<sup>2</sup>

Standard Deviation:

3.2

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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escription: Trailer T376A (INTERIOR)

## **Instrument Data Sheet**

Inst/RCT RCT		Analysis	Analysis Instr	Instr Instru	Probe Calibrati	Calibration	n Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey
Numbe	er ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре
1	514747	09/15/04	Electra	1517	DP-6	11/27/04	0.211	NA	300.0	NA	S
2	511654	09/16/04	SAC-4	1351	NA	03/02/05	0.330	. NA	10.0	NA	R
3	511654	09/16/04	Electra	4827	DP-6	02/25/02	0.221	NA	48.0	NA	т
4	516747	09/16/04	Electra	1234	DP-6	02/02/05	0.223	NA	48.0	NA	Q

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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scription: Trailer T376A (INTERIOR)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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scription: Trailer T376A (INTERIOR)

## **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371001PRP-N001	2	-0.9	N/A	N/A
371001PRP-N002	2	-0.9	N/A	N/A
371001PRP-N003	2	-0.9	N/A	N/A
371001PRP-N004	2	2.1	N/A	N/A
371001PRP-N005	2	-0.9	N/A	N/A
371001PRP-N006	2	-0.9	N/A	N/A
371001PRP-N007	2	2.1	N/A	N/A
371001PRP-N008	2	2.1	N/A	N/A
371001PRP-N009	2	-0.9	N/A	N/A
371001PRP-N010	2	-0.9	N/A	N/A
371001PRP-N011	2	2.1	N/A	N/A
371001PRP-N012	2	2.1	N/A	N/A
371001PRP-N013	2	-0.9	N/A	N/A
371001PRP-N014	2	2.1	N/A	N/A
371001PRP-N015	2	11.2	N/A	N/A

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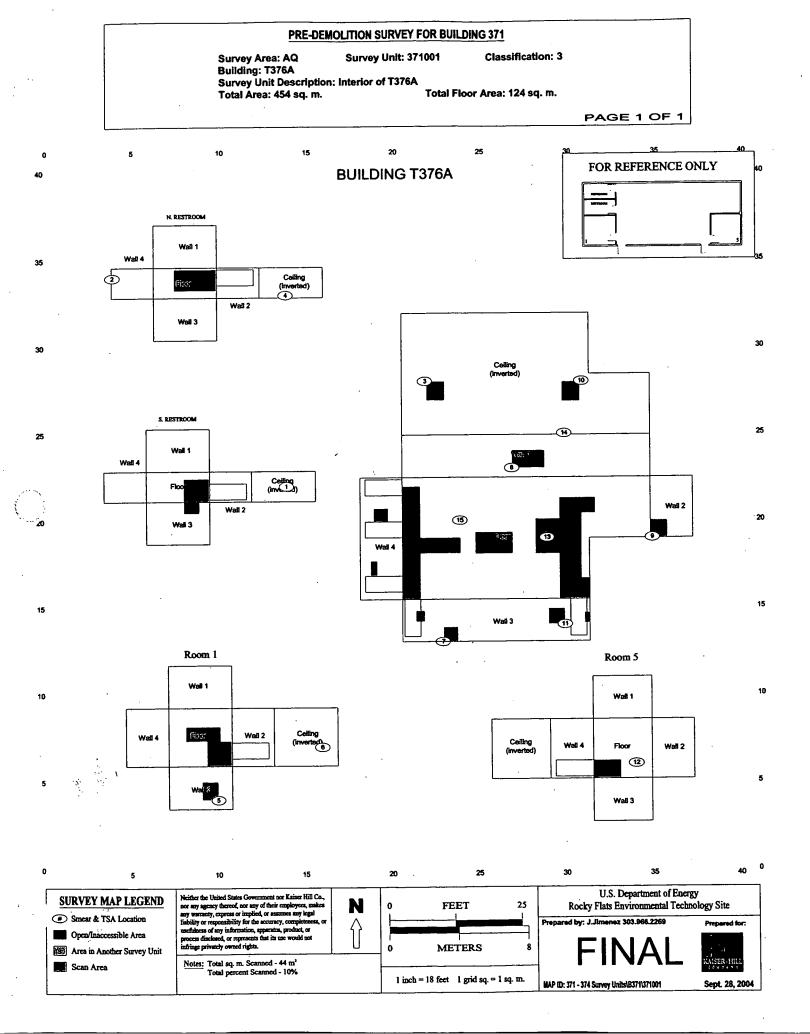
scription: Trailer T376A (INTERIOR)

## Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371001PRP-N001	3	18.7	N/A	N/A
371001PRP-N002	3	3.8	N/A	N/A
371001PRP-N003	3	-2.1	N/A	N/A
371001PRP-N004	3	21.9	, N/A	N/A
371001PRP-N005	3	-2.1	N/A	N/A
371001QRP-N005	4	1.6	N/A	N/A
371001PRP-N006	3	-2.1	N/A	N/A
371001PRP-N007	3	9.7	N/A	N/A
371001PRP-N008	3	12.8	N/A	, N/A
371001PRP-N009	3	9.7	N/A	N/A
371001PRP-N010	3	-2.1	N/A	N/A
371001PRP-N011	3	9.7	N/A	N/A
371001PRP-N012	3	27.8	N/A	N/A
371001PRP-N013	3	0.6	N/À	N/A
371001QRP-N013	4	7.4	N/A	N/A
371001PRP-N014	3	7.0	N/A	N/A
371001PRP-N015	3	-11.1	N/A	N/A

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# **ATTACHMENT C**

Survey Unit 371002

Radiological Data Summary and Survey Map

Survey Area: AQ

Survey Unit: 371002

Building: 371

ascription: Building 376 (INTERIOR)

### **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nor Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

Alpha

Maximum:

32.3 dpm/100cm<sup>2</sup>

Minimum:

-6.6 dpm/100cm<sup>2</sup>

Mean:

9.9 dpm/100cm<sup>2</sup>

Standard Deviation:

11.1

QC Maximum:

3.1 dpm/100cm<sup>2</sup>

QC Minimum:

-8.9 dpm/100cm<sup>2</sup>

QC Mean:

-2.9 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

#### Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

#### Alpha

Maximum:

5.2 dpm/100cm<sup>2</sup>

Minimum:

-0.9 dpm/100cm<sup>2</sup>

Mean:

0.1 dpm/100cm<sup>2</sup>

Standard Deviation:

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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scription: Building 376 (INTERIOR)

#### **Instrument Data Sheet**

Inst/R0	T RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Ef	ficiency	A-Prio (dpm/1	ri MDA 00cm²)	Survey	
Numbe	er ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре	
1	511654	09/10/04	Electra	4827	DP-6	02/25/04	0.221	NA	48.0	NA	Т	
2	516747	09/13/04	Electra	767	DP-6	10/26/04	0.226	NÄ	48.0	NA	Q	
3	516747	09/13/04	SAC-4	1053	NA	12/25/04	0.330	NA	10.0	NA	R	
4	511654	09/10/04	Electra	4827	DP-6	02/25/04	0.221	NA	300.0	NA	S	

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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escription: Building 376 (INTERIOR)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time is required. All locations are denoted on survey package survey map.

Comments:

Media No media samples are required for this survey unit.

Comments:

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scription: Building 376 (INTERIOR)

### Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371002PRP-N001	3	-0.9	N/A	N/A
371002PRP-N002	3	-0.9	N/A	N/A
371002PRP-N003	3	2.1	N/A	N/A
371002PRP-N004	3	5.2	N/A	N/A
371002PRP-N005	3	-0.9	N/A	N/A
371002PRP-N006	3	-0.9	N/A	N/A
371002PRP-N007	3	-0.9	N/A	N/A
371002PRP-N008	3	-0.9	N/A	N/A
371002PRP-N009	3	-0.9	N/A	N/A
371002PRP-N010	3	-0.9	N/A	N/A
371002PRP-N011	3	-0.9	N/A	N/A
371002PRP-N012	3 .	2.1	N/A	N/A
371002PRP-N013	3	-0.9	N/A	N/A
371002PRP-N014	3	-0.9	N/A	N/A
371002PRP-N015	3	2.1	N/A	N/A

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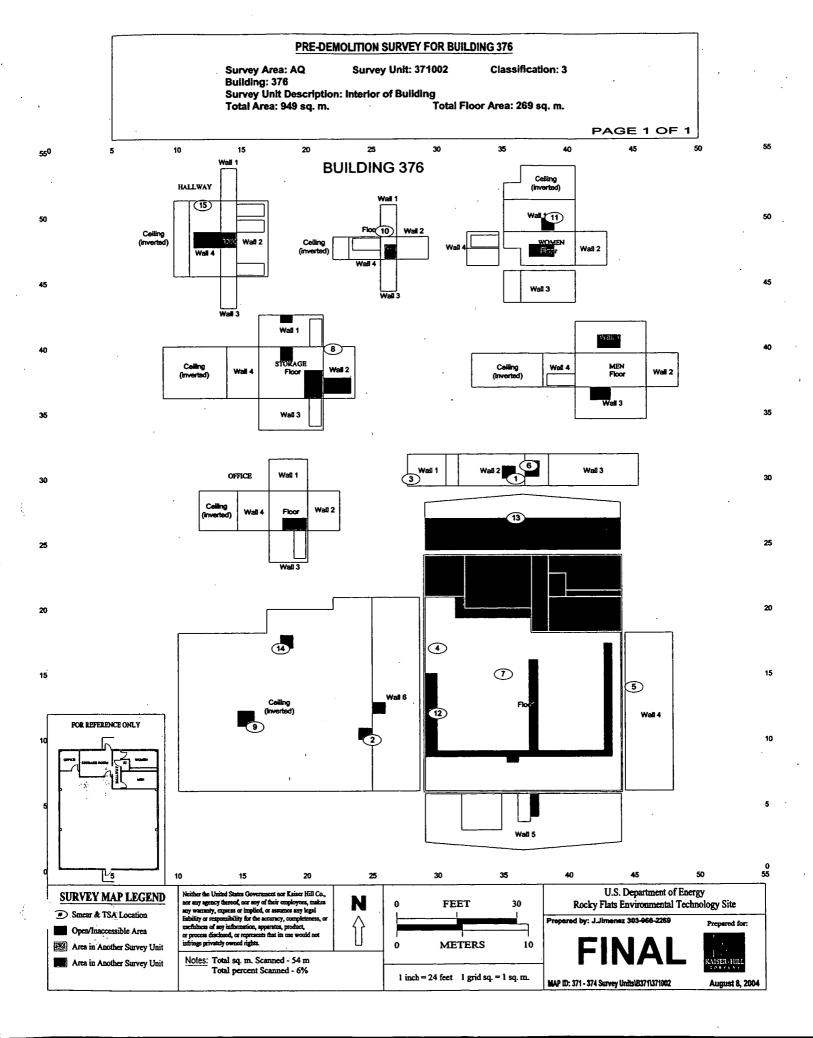
escription: Building 376 (INTERIOR)

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371002PRP-N001	1	8.3	N/A	N/A
371002PRP-N002	1	8.3	N/A	N/A
371002PRP-N003	1	5.1	N/A	N/A
371002PRP-N004	1	-3.9	N/A	N/A
371002PRP-N005	1	2.4	N/A	N/A
371002PRP-N006	1	11.5	N/A	N/A
371002PRP-N007	1	11.5	N/A	N/A
371002QRP-N007	2	3.1	N/A	N/A
371002PRP-N008	1	11.5	N/A	N/A
371002PRP-N009	1	-6.6	N/A	N/A
371002PRP-N010	1	32.3	N/A	N/A
371002PRP-N011	1	26.4	N/A	N/A
371002PRP-N012	1	5.1	N/A	N/A
371002QRP-N012	2	-8.9	N/A	· N/A
371002PRP-N013	1	26.4	N/A	N/A
371002PRP-N014	1	-0.8	N/A	N/A
371002PRP-N015	1	11.5	N/A	N/A

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# **ATTACHMENT D**

Survey Unit 371003

Radiological Data Summary and Survey Map

Survey Area: AQ

Survey Unit: 371003

Building: 371

scription: Trailer T371K (INTERIOR)

### **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

#### Alpha

Maximum:

15.9 dpm/100cm<sup>2</sup>

Minimum:

-14.4 dpm/100cm<sup>2</sup>

Mean:

2.0 dpm/100cm<sup>2</sup>

Standard Deviation:

9.3

QC Maximum:

12.1 dpm/100cm<sup>2</sup>

QC Minimum:

-12.1 dpm/100cm<sup>2</sup>

QC Mean:

0.0 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLemc:

300.0 dpm/100cm<sup>2</sup>

#### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

#### **Alpha**

Maximum:

2.7 dpm/100cm<sup>2</sup>

Minimum:

-0.3 dpm/100cm<sup>2</sup>

Mean:

0.9 dpm/100cm<sup>2</sup>

Standard Deviation:

1.5

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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escription: Trailer T371K (INTERIOR)

#### **Instrument Data Sheet**

Inst/RC	T RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Ef	ficiency		ri MDA 00cm²)	Survey
Numbe	r ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре
1	511654	09/17/04	Electra	4827	DP-6	02/25/05	0.221	NA	48.0	NA	Т
2	516747	09/17/04	Electra	1234	DP-6	02/02/05	0.223	NA	48.0	NA	Q
3	511654	09/17/04	SAC-4	1351	NA	03/02/05	0.330	NA	10.0	. NA	R
4	516747	09/17/04	Electra	1234	DP-6	02/02/05	0.223	NA	300.0	NA	S

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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scription: Trailer T371K (INTERIOR)

#### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package survey map.

Comments:

Media No media samples required for this survey unit.

Comments:

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escription: Trailer T371K (INTERIOR)

### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371003PRP-N001	3	2.7	N/A	N/A
371003PRP-N002	3	2.7	N/A	N/A
371003PRP-N003	3	-0.3	N/A	N/A
371003PRP-N004	3	-0.3	N/A	N/A
371003PRP-N005	3	-0.3	· N/A	N/A
371003PRP-N006	3	-0.3	N/A	N/A
371003PRP-N007	3	2.7	N/A	N/A
371003PRP-N008	3	-0.3	N/A	N/A
371003PRP-N009	3	-0.3	N/A	N/A
371003PRP-N010	3	-0.3	N/A	N/A
371003PRP-N011	3	-0.3	N/A	N/A
371003PRP-N012	3	2.7	, N/A	N/A
371003PRP-N013	3	2.7	N/A	N/A
371003PRP-N014	3	-0.3	N/A	N/A
371003PRP-N015	3	2.7	N/A	N/A

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scription: Trailer T371K (INTERIOR)

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371003PRP-N001	1	-5.4	N/A	N/A
371003PRP-N002	1	6.8	N/A	N/A
371003PRP-N003	1	15.9	N/A	N/A
371003PRP-N004	1	-5.4	N/A	N/A
371003PRP-N005	1	-8.1	N/A	N/A .
371003PRP-N006	1	1.0	N/A	N/A
371003PRP-N007	1	12.7	N/A	N/A
371003PRP-N008	1	12.7	N/A	N/A
371003PRP-N009	1	10.0	N/A	N/A
371003PRP-N010	1	-8.1	N/A	N/A
371003QRP-N010	2	-12.1	N/A	N/A
371003PRP-N011	1	3.7	N/A	N/A
371003PRP-N012	1	-14.4	N/A	N/A
371003PRP-N013	1	10.0	N/A	N/A
371003PRP-N014	1	-5.4	N/A	N/A
371003PRP-N015	1	3.7	N/A	N/A
371003QRP-N015	2	12.1	N/A	N/A

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#### **PRE-DEMOLITION SURVEY FOR BUILDING 371**

Survey Area: AQ

Survey Unit: 371003

Classification: 3

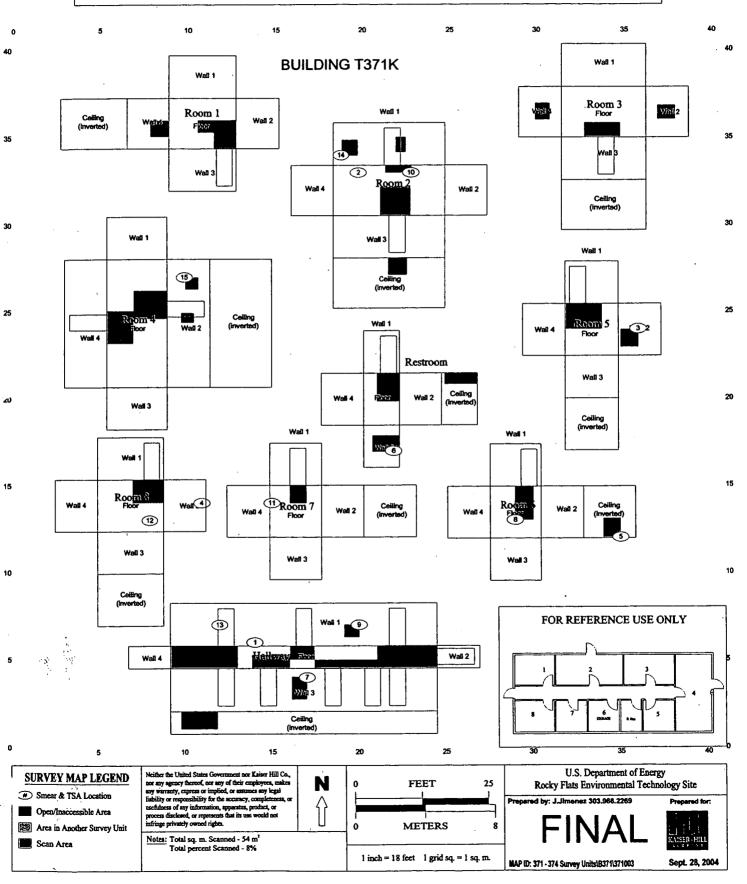
**Building: T371K** 

Survey Unit Description: Interior of Building

Total Area: 661 sq. m.

Total Floor Area: 126 sq. m.

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# **ATTACHMENT E**

Survey Unit 371004

Radiological Data Summary and Survey Map

Survey Area: AQ

Survey Unit: 371004

Building: 371

scription: Trailer T371H, I,& J (INTERIOR)

### **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

Alpha

Maximum:

26.1 dpm/100cm<sup>2</sup>

Minimum:

-4.2 dpm/100cm<sup>2</sup>

Mean:

6.7 dpm/100cm<sup>2</sup>

Standard Deviation:

9.5

QC Maximum:

7.4 dpm/100cm<sup>2</sup>

QC Minimum:

-1.6 dpm/100cm<sup>2</sup>

QC Mean:

2.9 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

#### Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

#### **Alpha**

Maximum:

8.5 dpm/100cm<sup>2</sup>

Minimum:

-0.9 dpm/100cm<sup>2</sup>

Mean:

2.2 dpm/100cm<sup>2</sup>

Standard Deviation:

2.4

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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scription: Trailer T371H, I,& J (INTERIOR)

#### **Instrument Data Sheet**

Inst/l	RCT RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Ef	ficiency	A-Prio (dpm/1		Survey	
Num	ber ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре	
1	511654	09/20/04	Electra	4827	DP-6	02/25/05	0.221	NA	300.0	NÄ	s	
2	516747	09/20/04	Electra	1234	DP-6	02/02/05	0.223	NA	300.0	NA	s	
3	511654	09/24/04	Electra	4827	DP-6	02/25/05	0.221	NA	48.0	NA	Т	
4	511654	09/24/04	SAC-4	1351	NA	03/02/05	0.330	NA	10.0	NA	R	
5	516747	09/29/04	Electra	1234	DP-6	02/02/05	0.223	NA	48.0	NA	Q	
6	511654	09/29/04	SAC-4	759	NA	03/20/05	0.330	NA	10.0	NA	R	

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, 1 = Investigation

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escription: Trailer T371H, I,& J (INTERIOR)

#### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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escription: Trailer T371H, I,& J (INTERIOR)

### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371004PRP-N001	4 .	-0.6	N/A	N/A
371004PRP-N002	4	2.4	N/A	N/A
371004PRP-N003	4	2.4	N/A	N/A
371004PRP-N004	4	2.4	N/A	N/A
371004PRP-N005	4	2.4	N/A	N/A
371004PRP-N006	4	2.4	N/A	N/A
371004PRP-N007	4	2.4	N/A	N/A
371004PRP-N008	4	-0.6	N/A	N/A
371004PRP-N009	. 4	2.4	N/A	N/A
371004PRP-N010	4	-0.6	N/A	N/A
371004PRP-N011	4	8.5	N/A	N/A
371004PRP-N012	4	2.4	N/A	N/A
371004PRP-N013	4	5.5	N/A	N/A
371004PRP-N014	6	2.1	N/A	N/A
371004PRP-N015	6	-0.9	N/A	N/A

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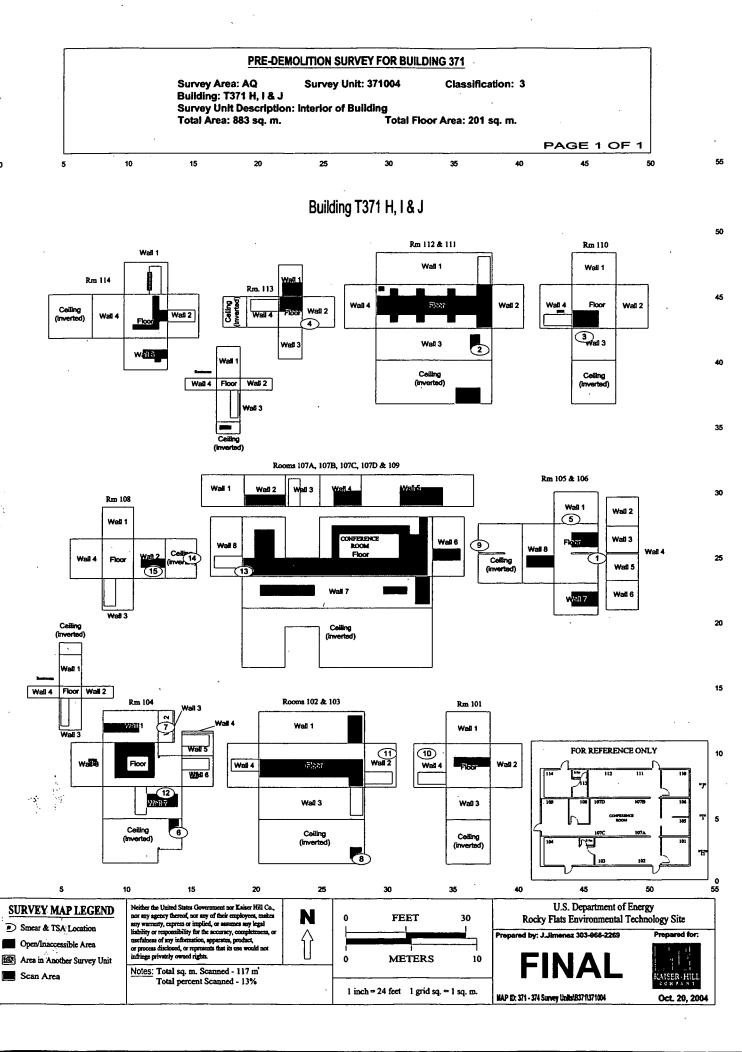
iscription: Trailer T371H, I,& J (INTERIOR)

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371004PRP-N001	3	-4.2	N/A	N/A
371004PRP-N002	3	. 26.1	N/A	N/A
371004PRP-N003	3	20.2	N/A	N/A
371004PRP-N004	3	22.9	ı N/A	N/A
371004PRP-N005	3	8.0	N/A	N/A
371004PRP-N006	3	-1.1	N/A	N/A
371004PRP-N007	3	2.1	N/A	N/A
371004PRP-N008	3	-1.1	N/A	N/A
371004PRP-N009	3	-1.1	N/A	N/A
371004PRP-N010	3	8.0	N/A	N/A
371004QRP-N010	5	7.4	N/A	N/A
371004PRP-N011	3	4.8	N/A	N/A
371004PRP-N012	3	11.2	N/A	N/A
371004PRP-N013	3	2.1	N/A	N/A
371004QRP-N013	5	-1.6	N/A	N/A
371004PRP-N014	5	3.4	N/A	N/A
371004PRP-N015	5	-1.1	N/A	N/A

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# **ATTACHMENT F**

Survey Unit 371005

Radiological Data Summary and Survey Map

Survey Area: AQ

Survey Unit: 371005

Building: 371

scription: The exterior surfaces of the following buildings: T376A, 376, T371K, T371H, I, & J

### **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

#### **Alpha**

Maximum:

94.4 dpm/100cm<sup>2</sup>

Minimum:

2.0 dpm/100cm<sup>2</sup>

Mean:

35.3 dpm/100cm<sup>2</sup>

Standard Deviation:

32.9

QC Maximum:

70.8 dpm/100cm<sup>2</sup>

QC Minimum:

25.5 dpm/100cm<sup>2</sup>

QC Mean:

48.2 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

#### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

#### **Alpha**

Maximum:

7.9 dpm/100cm<sup>2</sup>

Minimum:

-1.5 dpm/100cm<sup>2</sup>

Mean:

2.3 dpm/100cm<sup>2</sup>

Standard Deviation:

3.3

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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\*scription: The exterior surfaces of the following buildings: T376A, 376, T371K, T371H, I, & J

### **Instrument Data Sheet**

Inst/R	CT RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Ef	ficiency		ri MDA 00cm²)	Survey	
Numb	er ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре	
1	511654	10/28/04	Electra	1234	DP-6	02/02/05	0.223	NA	48.0	NA	Т	_
2	516747	11/16/04	Electra	4827	DP-6	02/25/05	0.221	NA	48.0	NA	Q	
3	516747	11/16/04	SAC-4	820	NA	02/24/05	0.330	NA	10.0	NA	R	
4	516747	11/16/04	SAC-4	1068	NA	12/21/04	0.330	NA:	10.0	· NA	R	
5	511654	10/28/04	Electra	1234	DP-6	02/02/05	0.223	NA	300.0	NA	S	
6	511654	11/16/04	Electra	4827	DP-6	02/25/05	0.221	NA	300.0	NA	S	

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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Survey Area: AQ

Survey Unit: 371005

Building: 371

escription: The exterior surfaces of the following buildings: T376A, 376, T371K, T371H, I, & J

#### **Comments Sheet**

General N/A

**Comments:** 

90-second count time required. All locations are denoted on survey package survey map. **TSA** 

Comments:

Due to the standard deviation (32.9 dpm/100 cm?) for this survey unit. A new sign p was determined from Table 5.4 of MARSSIM to ensure the minimum number of required samples were taken. A relative shift of 1.8 was calculated with a new sign p of .964070. Based on MARSSIM, a minimum of 13 measurements were required. A total of 15 measurements were collected; therefore, sufficient samples

were completed for this survey unit.

RSA 2-minute count time required. All locations are denoted on survey package survey map.

Comments:

No media samples are required for this survey unit. Media

Comments:

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escription: The exterior surfaces of the following buildings: T376A, 376, T371K, T371H, I, & J

### Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)		,
371005PRP-N001	3	1.8	N/A į	N/A	
371005PRP-N002	4	7.6	N/A	N/A	
371005PRP-N003	3	1.8	N/A	N/A	-
371005PRP-N004	4	4.6	N/A	N/A	
371005PRP-N005	3	1.8	N/A	N/A	
371005PRP-N006	4	-1.5	N/A	N/A	
371005PRP-N007	3	4.9	N/A	N/A	-
371005PRP-N008	4	1.5	N/A	, N/A	
371005PRP-N009	3	4.9	N/A	N/A	
371005PRP-N010	4	-1.5	N/A	N/A	
371005PRP-N011	3	-1.2	N/A	N/A	
371005PRP-N012	4	4.6	N/A	N/A	
371005PRP-N013	3	7.9	N/A	N/A	
371005PRP-N014	4	-1.5	N/A	N/A `	
371005PRP-N015	3	-1.2	N/A	N/A	

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nscription: The exterior surfaces of the following buildings: T376A, 376, T371K, T371H, I, & J

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371005PRP-N001	1	10.9	N/A	N/A
371005PRP-N002	1	4.7	N/Ą	N/A
371005PRP-N003	1	7.8	N/A	N/A
371005PRP-N004	1	34.7	N/A	N/A
371005PRP-N005	1	64.8	N/A	N/A
371005PRP-N006	1	58.5	N/A	N/A
371005PRP-N007	1	13.6	N/A	N/A
371005PRP-N008	1	7.8	N/A	N/A
371005QRP-N008	2	25.5	N/A	N/A
371005PRP-N009	1	7.8	N/A	N/A
371005PRP-N010	1	67.4	N/A	N/A
371005PRP-N011	1	49.5	. N/A	N/A
371005QRP-N011	2	70.8	N/A	N/A
371005PRP-N012	1	91.7	N/A	N/A
371005PRP-N013	1	94.4	N/A	N/A
371005PRP-N014	1	13.6	N/A	N/A
371005PRP-N015	1	2.0	N/A	N/A

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#### **PRE-DEMOLITION SURVEY FOR BUILDING 371** Survey Area: AQ Survey Unit: 371005 Classification: 3 Buildings: T371H, I, J, K, T376A, B376 Survey Unit Description: Exterior of Buildings Total Area: 2121 sq. m. Total Roof Area: 723 sq. m. PAGE 1 OF 4 10 15 30 35 **Building 376** North Wall **West Wall** (11) South Wall **East Wall** 25 **East** 15 N. Entrance S. Entrance Wall Ceiling Ceiling (inverted) (inverted) Wall 3 10 Wall 3 Wall 2 Wall 2 Roof Roof West S. Wall W. Wall N. Wall 20 40 Neither the United States Government nor Kaiser Hill Co, nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accumery, completeness, or unethiness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. U.S. Department of Energy SURVEY MAP LEGEND N FEET Rocky Flats Environmental Technology Site Smear & TSA Location Open/Inaccessible Area Area in Another Survey Unit **METERS** Notes: Total sq. m. Scanned - 201 m Scanned Area Total percent Scanned - 10% 1 inch = 18 feet 1 grid sq. = 1 sq. m. MAP ID: 371 - 374 Survey Units/B371/371005

#### **PRE-DEMOLITION SURVEY FOR BUILDING 371** Survey Unit: 371005 Classification: 3 Survey Area: AQ Buildings: T371H, I, J, K, T376A, B376 Survey Unit Description: Exterior of Buildings Total Roof Area: 723 sq. m. Total Area: 2121 sq. m. PAGE 2 OF 4 35 10 15 T371K Exterior **West Wall** South Wall **East Wall** North Wall North West W. Entrance E. Entrance Roof Roof 15 South N. Wali W. Wall N. Entrance Wall 1 Wall 1 Wall 3 Roof Wall 2 Wall 2 Wall 3 Wall 3 Wall 2 E. Wall Ceiling (inverted) Ceiling Ceiling (inverted) (inverted) 20 15 Neither the United States Government nor Kaiser Hill Co, nor say agency thereof, nor say of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completences, or usefulness of any information, apparatus, production or process disclosed, or represents that its use would not infringe privately owned rights. U.S. Department of Energy **SURVEY MAP LEGEND** FEET 25 Rocky Flats Environmental Technology Site Smear & TSA Location Open/Inaccessible Area **METERS** Area in Another Survey Unit Notes: Total sq. m. Scanned - 201 m Total Scanned Area Total percent Scanned - 10% 1 inch = 18 feet 1 grid sq. = 1 sq. m. NAP ID: 371 - 374 Survey Units(B371\371005

0 40

15

#### **PRE-DEMOLITION SURVEY FOR BUILDING 371**

Survey Area: AQ

Survey Unit: 371005

20

Classification: 3

Buildings: T371H, I, J, K, T376A, B376

15

Survey Unit Description: Exterior of Buildings

Total Area: 2121 sq. m.

Total Roof Area: 723 sq. m.

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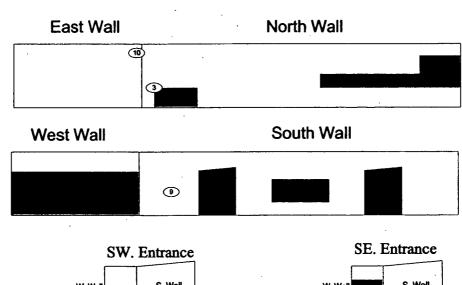
30

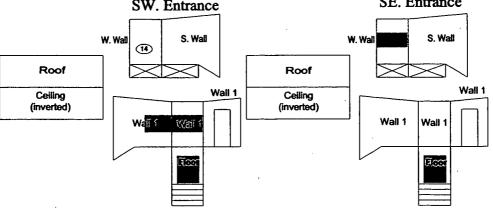
35

35

T376A

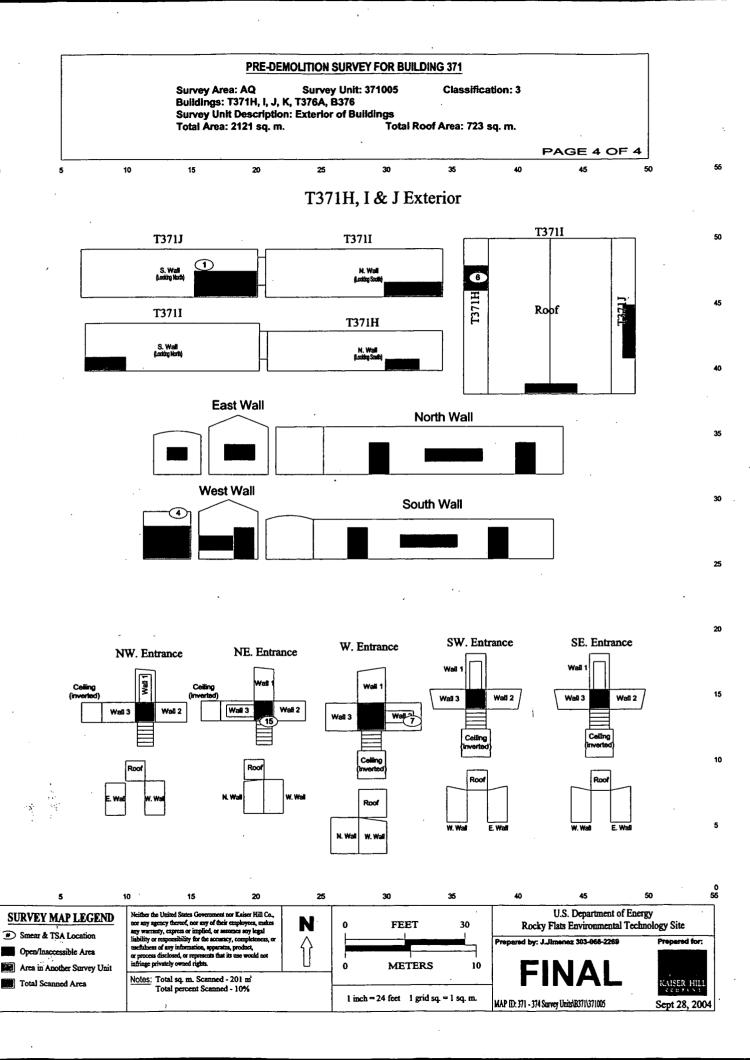
Roof





#### U.S. Department of Energy **SURVEY MAP LEGEND** nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or FEET 25 Rocky Flats Environmental Technology Site Smear & TSA Location Open/Inaccessible Area **METERS** Area in Another Survey Unit Notes: Total sq. m. Scanned - 201 m Scanned Area Total percent Scanned - 10% 1 inch = 18 feet 1 grid sq. = 1 sq. m. IAAP ID: 371 - 374 Survey Units1B371371005

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# **ATTACHMENT G**

Survey Unit 371008

Radiological Data Summary and Survey Map

escription: Building 371 Exterior Surfaces

# Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 158 Nbr Biased

Nbr Biased Measurements Required: 0

Nbr QC Required: 8

Nbr Random Measurements Performed: 158

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 8

**Alpha** 

Maximum:

93.9 dpm/100cm<sup>2</sup>

Minimum:

-13.5 dpm/100cm<sup>2</sup>

Mean:

31.1 dpm/100cm<sup>2</sup>

Standard Deviation:

20.8

QC Maximum:

58.7 dpm/100cm<sup>2</sup>

QC Minimum:

-11.8 dpm/100cm<sup>2</sup>

QC Mean:

20.7 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

Removable Surface Activity Measurements

Nbr Random Measurements Required: 158

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 158

Nbr Biased Measurements Performed: 0

**Alpha** 

Maximum:

5.8 dpm/100cm<sup>2</sup>

Minimum:

-0.3 dpm/100cm<sup>2</sup>

Mean:

0.7 dpm/100cm<sup>2</sup>

Standard Deviation:

1.3

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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scription: Building 371 Exterior Surfaces

### **Instrument Data Sheet**

Inst/R0	CT RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Ef	ficiency	A-Prior (dpm/1		Survey
Numbe	er ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре
1	508194	02/18/05	Electra	1821	DP-6	06/07/05	0.214	NA	48.0	NA	Т
2	600961	02/18/05	Electra	1584	DP-6	03/28/05	0.206	NA	48.0	NA	т
3	600961	02/18/05	SAC-4	858	NA	04/27/05	0.330	. NA	10.0	NA	R
4	600961	02/18/05	SAC-4	1497	NA	06/09/05	0.330	NA	10.0	NA	R
5	600961	02/18/05	SAC-4	985	NA	05/15/05	0.330	NA	10.0	NA	R
6	600961	02/18/05	SAC-4	1072	NA	04/11/05	0.330	NA	10.0	NA	R
7	600961	02/18/05	SAC-4	1407	NA	06/08/05	0.330	NA	10.0	NA	R
8	711756	02/19/05	Electra	1821	DP-6	06/07/05	0.214	NA	48.0	NA	Т
9	711756	02/19/05	SAC-4	858	NA	04/27/05	0.330	NA	10.0	NA	R
10	702381	02/19/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	Q
11	903165	02/19/05	Electra	1368	DP-6	04/20/05	0.220	NA	48.0	NA	Т
12	903165	02/02/05	Electra	1368	DP-6	04/20/05	0.220	NA	48.0	NA	T
ļ <sub>. 1</sub> 3	600424	02/20/05	SAC-4	858	NA	04/27/05	0.330	NA	10.0	NA	R
4	600424	02/20/05	SAC-4	1497	NA	06/09/05	0.330	NA	10.0	NA	R
15	600424	02/20/05	SAC-4	985	NA	05/15/05	0.330	NA	10.0	NA	R
16	600424	02/20/05	SAC-4	1072	NA	04/11/05	0.330	NA:	10.0	NA	R
17	600424	02/20/05	SAC-4	1407	NA	06/08/05	0.330	NA	10.0	NA	R
18	711756	02/20/05	Electra	1584	DP-6	03/28/05	0.206	NA	48.0	NA	т
19	903165	02/20/05	SAC-4	1407	NA	06/08/05	0.330	, NA	10.0	NA	R
20	601209	02/20/05	Electra	768	AP-6	04/19/05	0.244	NA	300.0	NA	s
21	512017	02/20/05	Electra	1821	DP-6	06/07/05	0.214	NA	48.0	NA	, т
22	509212	02/20/05	Electra	775	DP-6	07/03/05	0.222	NA	48.0	NA	Т
23	600961	02/20/05	Electra	137	AP-6	08/09/05	0.174	NA ·	300.0	NA	S
24	508194	02/20/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	Τ
25	600424	02/20/05	Electra	761	DP-6	05/01/05	0.219	NA	48.0	NA	T
26	600806	02/20/05	Electra	1354	DP-6	04/21/05	0.224	NA	48.0	NA	Т
27	<sub>3</sub> ,600131	02/20/05	Electra	1274	DP-6	06/07/05	0.224	NA	48.0	NA	T
28	601300	02/20/05	Electra	760	DP-6	08/02/05	0.213	NA	48.0	NA	T
29	600475	02/20/05	Electra	4339	DP-6	03/01/05	0.205	NA	48.0	NA	T
30	903165	02/23/05	SAC-4	1398	DP-6	04/20/05	0.220	- NA	48.0	NA	Т

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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escription: Building 371 Exterior Surfaces

#### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N001	13	-0.3	N/A	N/A
371008PRP-N002	. 14	-0.3	N/A	N/A
371008PRP-N003	9	-0.3	N/A	N/A
371008PRP-N004	14	-0.3	. N/A	N/A
371008PRP-N005	3	-0.3	N/A	N/A
371008PRP-N006	13	4.2	N/A	N/A
371008PRP-N007	15	-0.3	N/A	N/A
371008PRP-N008	16	-0.3	N/A	N/A
371008PRP-N009	4	1.2	N/A	N/A
371008PRP-N010	9	1.2	N/A	N/A
371008PRP-N011	15	1.2	N/A	N/A
371008PRP-N012	5	-0.3	N/A	N/A
371008PRP-N013	17	-0.3	N/A	N/A
371008PRP-N014	16	2.7	N/A	N/A
371008PRP-N015	6	1.2	N/A	N/A
371008PRP-N016	. 7	-0.3	N/A	N/A
371008PRP-N017	13	4.2	N/A	N/A
371008PRP-N018	3	-0.3	N/A	N/A
371008PRP-N019	13	-0.3	. N/A	N/A
371008PRP-N020	9	-0.3	N/A	N/A
371008PRP-N021	14	5.8	N/A	N/A
371008PRP-N022	13	1.2	N/A	N/A
371008PRP-N023	4	1.2	N/A	N/A
371008PRP-N024	14	-0.3	N/A	N/A
371008PRP-N025	9	1.2	N/A	N/A
371008PRP-N026	9	1.2	N/A	N/A
371008PRP-N027	5	1.2	N/A	N/A
371008PRP-N028	6	2.7	N/A	N/A
371008PRP-N029	15	1.2	N/A	N/A

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scription: Building 371 Exterior Surfaces

### Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N030	6	1.2	N/A	N/A
371008PRP-N031	7	-0.3	N/A	N/A
371008PRP-N032	3	1.2	N/A	N/A
371008PRP-N033	9	1.2	N/A	N/A
371008PRP-N034	6	1.2	N/A	N/A
371008PRP-N035	4	-0.3	N/A	N/A
371008PRP-N036	9	-0.3	N/A	N/A
371008PRP-N037	5	1.2	N/A	N/A
371008PRP-N038	6	-0.3	N/A	N/A
371008PRP-N039	14	-0.3	N/A	N/A
371008PRP-N040	9	1.2	N/A	N/A
371008PRP-N041	7.	2.7	N/A	N/A
371008PRP-N042	3	-0.3	· N/A	N/A
371008PRP-N043	16	-0.3	, N/A	N/A
371008PRP-N044	17 .	1.2	N/A	N/A
371008PRP-N045	13	-0.3	N/A	N/A
371008PRP-N046	14	-0.3	N/A	N/A
371008PRP-N047	15	2.7	N/A	N/A
371008PRP-N048	4	1.2	N/A	N/A
371008PRP-N049	5	-0.3	N/A	N/A
371008PRP-N050	16	1.2	N/A	N/A
371008PRP-N051	6	1.2	N/A	N/A
371008PRP-N052	7	1.2	N/A	N/A
371008PRP-N053	3	-0.3	N/A	N/A
371008PRP-N054	4	-0.3	N/A	N/A
371008PRP-N055	9	1.2	N/A	N/A
371008PRP-N056	15	1.2	N/A	N/A
371008PRP-N057	5	-0.3	N/A	N/A
371008PRP-N058	6	2.7	N/A	N/A

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# Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N059	7	1.2	N/A	N/A
371008PRP-N060	9	-0.3	N/A	N/A
371008PRP-N061	9	-0.3	N/A	N/A
371008PRP-N062	3	2.7	N/A	· N/A
371008PRP-N063	16	-0.3	N/A	N/A
371008PRP-N064	19	-0.3	N/A	N/A
371008PRP-N065	4	1.2	N/A	N/A
371008PRP-N066	5	4.2	N/A	N/A
· 371008PRP-N067	9	1.2	N/A	N/A
371008PRP-N068	17	-0.3	N/A	N/A
371008PRP-N069	15	2.7	N/A	N/A
371008PRP-N070	13	-0.3	N/A	N/A
371008PRP-N071	14	-0.3	N/A	N/A
371008PRP-N072	15	2.7	N/A	N/A
371008PRP-N073	6	1.2	N/A	N/A
371008PRP-N074	16	1.2	N/A	N/A
371008PRP-N075	7 .	1.2	N/A	N/A
371008PRP-N076	3	2.7	N/A	N/A
371008PRP-N077	4	2.7	N/A	N/A
371008PRP-N078	5	-0.3	N/A	N/A
371008PRP-N079	6	1.2	N/A	N/A
371008PRP-N080	7	2.7	N/A	N/A
371008PRP-N081	16	-0.3	N/A	N/A
371008PRP-N082	17	2.7	N/A	N/A
371008PRP-N083	. 9	1.2	N/A	N/A
371008PRP-N084	13	1.2	N/A	N/A
371008PRP-N085	- 3	-0.3	N/A	N/A
371008PRP-N086	14	1.2	N/A	N/A
371008PRP-N087	4	1.2	N/A	N/A

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escription: Building 371 Exterior Surfaces

# **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N088	5	-0.3	N/A	N/A
371008PRP-N089	15	2.7	N/A	N/A ·
371008PRP-N090	13	-0.3	N/A	N/A
371008PRP-N091	14	1.2	N/A	N/A
371008PRP-N092	6	1.2	N/A	N/A
371008PRP-N093	15	1.2	N/A	N/A
371008PRP-N094	16	-0.3	N/A	N/A
371008PRP-N095	16	-0.3	N/A	N/A
371008PRP-N096	9	-0.3	, N/A	N/A
371008PRP-N097	6	-0.3	N/A	N/A
371008PRP-N098	7	1.2	N/A	N/A
371008PRP-N099	17	-0.3	N/A	N/A
371008PRP-N100	9	-0.3	N/A	N/A
371008PRP-N101	17	1.2	N/A	N/A
371008PRP-N102	13	-0.3	N/A	N/A
371008PRP-N103	3	2.7	N/A	N/A
371008PRP-N104	14	-0.3	N/A	N/A
371008PRP-N105	9	-0.3	N/A	N/A
371008PRP-N106	15	-0.3	N/A	N/A
371008PRP-N107	4	-0.3	N/A	N/A
371008PRP-N108	5	-0.3	N/A	N/A
. 371008PRP-N109	16	-0.3	N/A	N/A
371008PRP-N110	6	-0.3	N/A	N/A
371008PRP-N111	19	-0.3	N/A	N/A
371008PRP-N112	7	-0.3	N/A	N/A
371008PRP-N113	9	-0.3	N/A	N/A
371008PRP-N114	17	-0.3	N/A	N/A
371008PRP-N115	19	5.8	N/A	N/A
371008PRP-N116	9	1.2	N/A	N/A

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# **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N117	3	-0.3	N/A	N/A
371008PRP-N118	4	-0.3	N/A	N/A
371008PRP-N119	13	1.2	N/A	N/A
371008PRP-N120	9	-0.3	. N/A	N/A
371008PRP-N121	14	-0.3	N/A	N/A
371008PRP-N122	9	2.7	N/A	N/A
371008PRP-N123	5	-0.3	N/A	N/A
371008PRP-N124	13	-0.3	N/A	N/A
371008PRP-N125	14	-0.3	N/A	N/A
371008PRP-N126	6	-0.3	N/A	N/A -
371008PRP-N127	7	1.2	N/A	N/A
371008PRP-N128	3	-0.3	N/A	N/A
371008PRP-N129	13	1.2	N/A	N/A
371008PRP-N130	4	-0.3	N/A	N/A
371008PRP-N131	15	1.2	N/A	N/A
371008PRP-N132	5	1.2	N/A	N/A
371008PRP-N133	9	-0.3	N/A	N/A
371008PRP-N134	16	1.2	N/A	N/A
371008PRP-N135	9	-0.3	N/A	N/A
371008PRP-N136	17	-0.3	N/A	N/A
371008PRP-N137	6	-0.3	N/A	N/A
371008PRP-N138	13	1.2	N/A	N/A
371008PRP-N139	14	-0.3	N/A	N/A
371008PRP-N140	9	-0.3	N/A	N/A
371008PRP-N141	7	-0.3	N/A	N/A
371008PRP-N142	3	-0.3	N/A	N/A
371008PRP-N143	4	-0.3	N/A	N/A
371008PRP-N144	5	1.2	N/A	N/A
371008PRP-N145	15	-0.3	. N/A	N/A

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# **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N146	16	2.7	N/A	N/A
371008PRP-N147	6	-0.3	N/A	N/A
371008PRP-N148	7	-0.3	N/A	N/A
371008PRP-N149	3	-0.3	N/A	N/A
371008PRP-N150	17	1.2	N/A	N/A
371008PRP-N151	4	1.2	N/A	N/A
371008PRP-N152	9	2.7	N/A	N/A
371008PRP-N153	13	-0.3	N/A	N/A
371008PRP-N154	5	-0.3	N/A	N/A
371008PRP-N155	14	-0.3	N/A	N/A
371008PRP-N156	6	-0.3	N/A	N/A
371008PRP-N157	9	1.2	N/A	N/A
371008PRP-N158	15	-0.3	N/A	N/A

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# Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N001	11	40.6	N/A	N/A
371008PRP-N002	11	4.3	N/A	N/A
371008PRP-N003	8	17.8	N/A	N/A
371008PRP-N004	18	68.2	N/A	N/A
371008PRP-N005	1	-0.9	N/A	N/A
371008QRP-N005	2	29.2	N/A	N/A
371008QRP-N006	11	25.1	N/A	N/A
371008PRP-N006	12	62.0	N/A	N/A
371008QRP-N007	11	31.4	N/A	N/A
371008PRP-N007	12	56.1	N/A	N/A
371008PRP-N008	11	16.6	N/A	N/A
371008QRP-N008	12	58.7	N/A	N/A
371008PRP-N009	1	27.2	N/A	N/A
371008PRP-N010	8	55.2	N/A	N/A
371008PRP-N011	18	6.5	N/A	N/A
371008PRP-N012	1	17.8	N/A	N/A
371008PRP-N013	12	43.8	N/A	N/A
371008PRP-N014	18	23.0	N/A	N/A
371008PRP-N015	1	49.1	N/A	N/A
371008PRP-N016	1	14.6	N/A	N/A
371008PRP-N017	12	10.6	N/A	N/A
371008PRP-N018	2	39.1	N/A	N/A
371008PRP-N019	12	-1.6	N/A	N/A
371008PRP-N020	8	42.6	N/A	Ń/A
371008PRP-N021	12	47.0	N/A	N/A
371008PRP-N022	30	28.8	N/A	N/A
371008PRP-N023	1	8.5	N/A	N/A

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# Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N024	11	22.5	N/A	N/A
371008PRP-N025	8	64.6	N/A	N/A
371008PRP-N026	8	33.2	N/A	N/A
371008PRP-N027	1	5.2	N/A	N/A
371008PRP-N028	10	68.9	N/A	N/A
371008PRP-N029	12	28.8	N/A	N/A
371008PRP-N030	2	29.4	· N/A	N/A
371008PRP-N031	1	36.5	N/A	N/A
371008QRP-N031	10	29.9	N/A	N/A
371008PRP-N032	2	45.4	N/A	N/A
371008PRP-N033	8	33.2	N/A	N/A
371008PRP-N034	10	40.9	N/A	N/A
371008PRP-N035	1	42.6	N/A	N/A
371008PRP-N036	8	50.5	N/A	N/A
371008PRP-N037	1	-4.1	N/A	N/A
371008PRP-N038	1	64.6	N/A	N/A
371008PRP-N039	18	48.8	N/A	N/A
371008PRP-N040	8	39.8	N/A	N/A
371008PRP-N041	2	29.4	N/A	N/A
371008PRP-N042	2	16.2	N/A	N/A
371008PRP-N043	11	74.3	N/A	· N/A
371008PRP-N044	12	56.1	N/A	N/A
371008PRP-N045	11	65.2	N/A	N/A
371008PRP-N046	11	37.9	N/A	N/A
371008PRP-N047	12	31.6	N/A	N/A
371008PRP-N048	1	30.4	N/A	N/A
371008PRP-N049	2	0.2	N/A	N/A

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### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N050	10	36.4	N/A	N/A
371008PRP-N051	1	27.2	N/A	N/A <sub>.</sub>
371008PRP-N052	2	6.5	N/A	N/A , .
371008PRP-N053	1	27.2	N/A	N/A
371008PRP-N054	1	11.8	N/A	N/A
371008PRP-N055	8	55.2	N/A	N/A
371008PRP-N056	11	62.0	N/A	N/A
371008PRP-N057	2	29.4	N/A	N/A
371008PRP-N058	. 2	13.3	N/A	N/A
371008PRP-N059	. 1	2.4	N/A	N/A
371008PRP-N060	8	21.1	N/A	N/A
371008PRP-N061	8	17.8	N/A	N/A
371008PRP-N062	1	21.1	N/A	N/A
371008PRP-N063	12	47.0	N/A	N/A
371008PRP-N064	12	43.8	N/A	N/A
371008PRP-N065	2	9.9	N/A	N/A
371008PRP-N066	2	13.3	N/A	· N/A
371008PRP-N067	8	45.9	N/A	N/A
371008PRP-N068	12	25.6	, N/A	N/A
371008PRP-N069	18	68.2	N/A	N/A
371008PRP-N070	12	31.6	N/A	N/A
371008PRP-N071	11	49.7	N/A	N/A
371008PRP-N072	12	49.7	N/A	N/A
371008PRP-N073	30	19.7	N/A	N/A
371008PRP-N074	<sup>°</sup> 18	71.6	· N/A	N/A
371008PRP-N075	2	39.1	N/A	N/A
371008PRP-N076	1	-4.1	N/A	N/A

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# Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N077	1	8.5	N/A	N/A
371008PRP-N078	2	3.6	N/A	N/A
371008PRP-N079	2	13.3	N/A	· N/A
371008PRP-N080	2	26.0	N/A	N/A
371008PRP-N081	2	45.4	N/A	N/A
371008PRP-N082	11	25.6·	N/A	N/A
371008PRP-N083	8	14.6	N/A	N/A
371008PRP-N084	12	47.0	N/A	N/A
371008PRP-N085	1	5.2	N/A	N/A
371008PRP-N086	12	4.3	N/A	N/A
371008PRP-N087	1	27.2	N/A	N/A
371008PRP-N088	1	-4.1	N/A	N/A
371008PRP-N089	12	22.5	N/A	N/A
371008PRP-N090	18	68.2	N/A	N/A
371008PRP-N091	18	58.5	N/A	N/A
371008PRP-N092	10	74.7	N/A	N/A
371008PRP-N093	18	93.9	N/A	N/A
371008PRP-N094	18	26.0	N/A	N/A
371008PRP-N095	11	28.4	N/A	N/A
371008PRP-N096	8	14.6	N/A	N/A
371,008PRP-N097	1	51.9	N/A	N/A
371008PRP-N098	2	29.4	N/A	N/A
371008PRP-N099	11	49.7	N/A	N/A
371008PRP-N100	8	39.8	N/A	N/A
371008PRP-N101	18	42.5	N/A	N/A
371008PRP-N102	12	56.1	N/A	N/A
371008PRP-N103	2	26.0	N/A	N/A

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### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N104	11	52.9	- N/A	N/A
371008PRP-N105	8	11.8	N/A	N/A
371008PRP-N106	12	-4.8	N/A	N/A
371008PRP-N107	1	36.5	N/A	N/A
371008QRP-N107	10	3.3	N/A	N/A
371008PRP-N108	. 1	8.5	N/A	N/A
371008PRP-N109	11	52.9	N/A	N/A
371008PRP-N110	2	16.2	· N/A	N/A
371008PRP-N111	12	56.1	N/A	N/A
371008PRP-N112	2	26.0	N/A	N/A
371008PRP-N113	8	42.6	N/A	N/A
371008PRP-N114	11	28.8	. N/A	N/A
371008PRP-N115	12	31.6	N/A	N/A
371008PRP-N116	8	23.9	N/A	N/A
371008PRP-N117	2	52.2	N/A	N/A
371008PRP-N118	1	11.8	N/A	N/A
371008PRP-N119	18	61.9	N/A	N/A
371008PRP-N120	8	11.8	N/A	N/A
371008PRP-N121	30	37.9	N/A	N/A
371008PRP-N122	8	42.6	N/A	N/A
371008PRP-N123	1	51.9	N/A	N/A
371008PRP-N124	12	28.8	N/A	N/A
371008PRP-N125	11	31.6	N/A	N/A
371008PRP-N126	1	27.2	N/A	N/A
371008PRP-N127	1	21.1	N/A	N/A
371008PRP-N128	1	-4.1	N/A	N/A
371008PRP-N129	12	19.7	N/A	N/A

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# Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371008PRP-N130	1	21.1	N/A	N/A
371008PRP-N131	11	43.8	N/A	N/A
371008PRP-N132	1	8.5	N/A	N/A
371008PRP-N133	8	36.5	N/A	N/A
371008PRP-N134	12	13.4	N/A	N/A
371008PRP-N135	8	21.1	N/A	N/A
371008PRP-N136	11	34.7	N/A	N/A
371008PRP-N137	1	33.2	N/A	N/A
371008PRP-N138	11	52.9	N/A	N/A
371008PRP-N139	10	23.1	N/A	N/A
371008PRP-N140	10	18.7	N/A	N/A
. 371008PRP-N141	1	49.1	N/A	N/A
371008QRP-N141	10	-11.8	N/A	N/A
371008PRP-N142	2	23.0	N/A	N/A
371008PRP-N143	1	-4.1	N/A	N/A
371008QRP-N143	10	0.2	N/A	N/A
371008PRP-N144	1	8.5	N/A	N/A
371008PRP-N145	12	4.3	N/A	N/A
371008PRP-N146	11	47.0	N/A	N/A
371008PRP-N147	1	-13.5	N/A	N/A
371008PRP-N148	1	11.8	N/A	. N/A
371008PRP-N149	. 1	5.2	N/A	N/A
371008PRP-N150	11	56.1	N/A	N/A
371008PRP-N151	2	48.8	N/A	N/A
371008PRP-N152	8	8.5	N/A	N/A
371008PRP-N153	12	10.6	N/A	N/A
371008PRP-N154	1	-0.9	N/A	N/A

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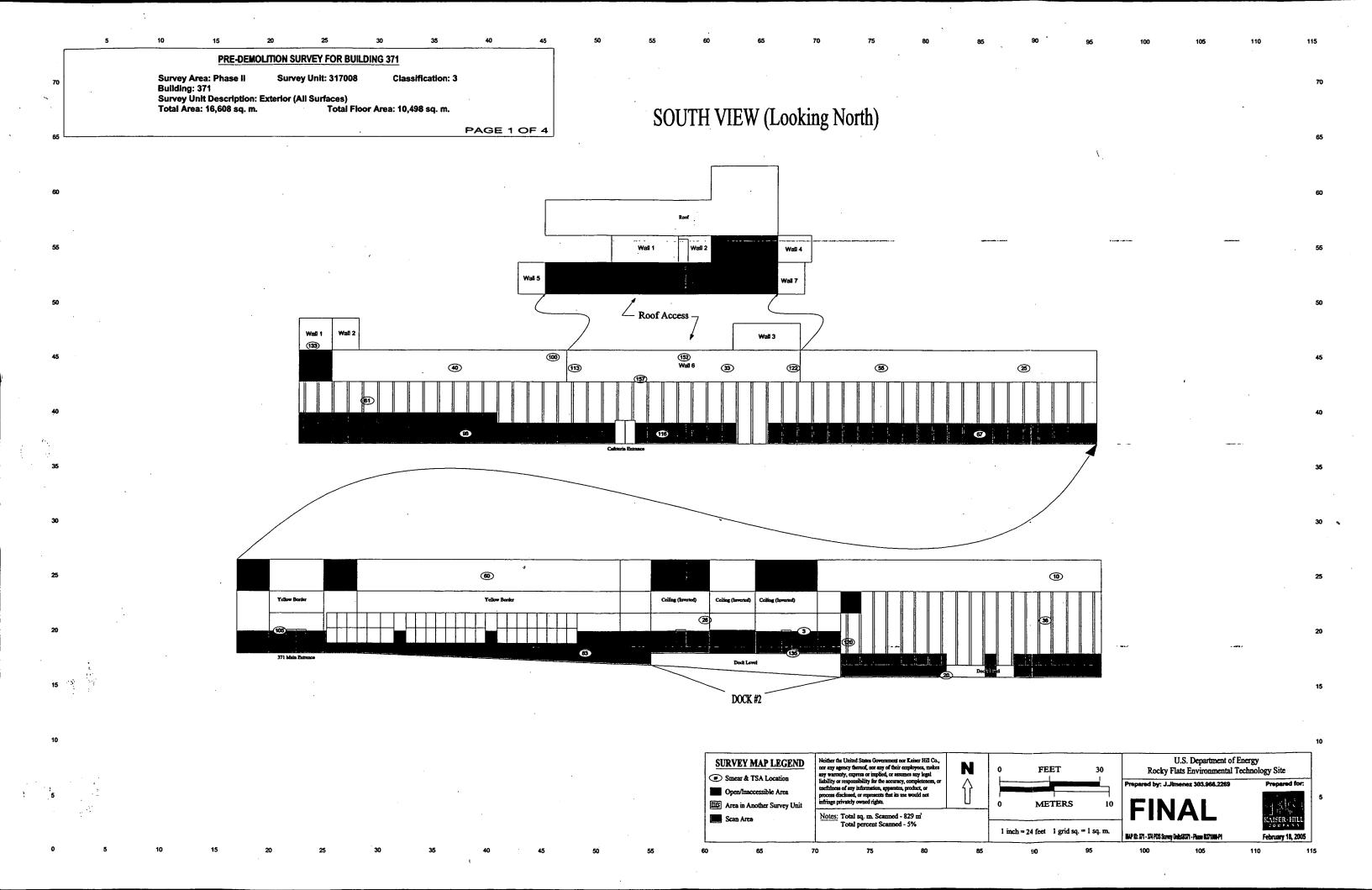
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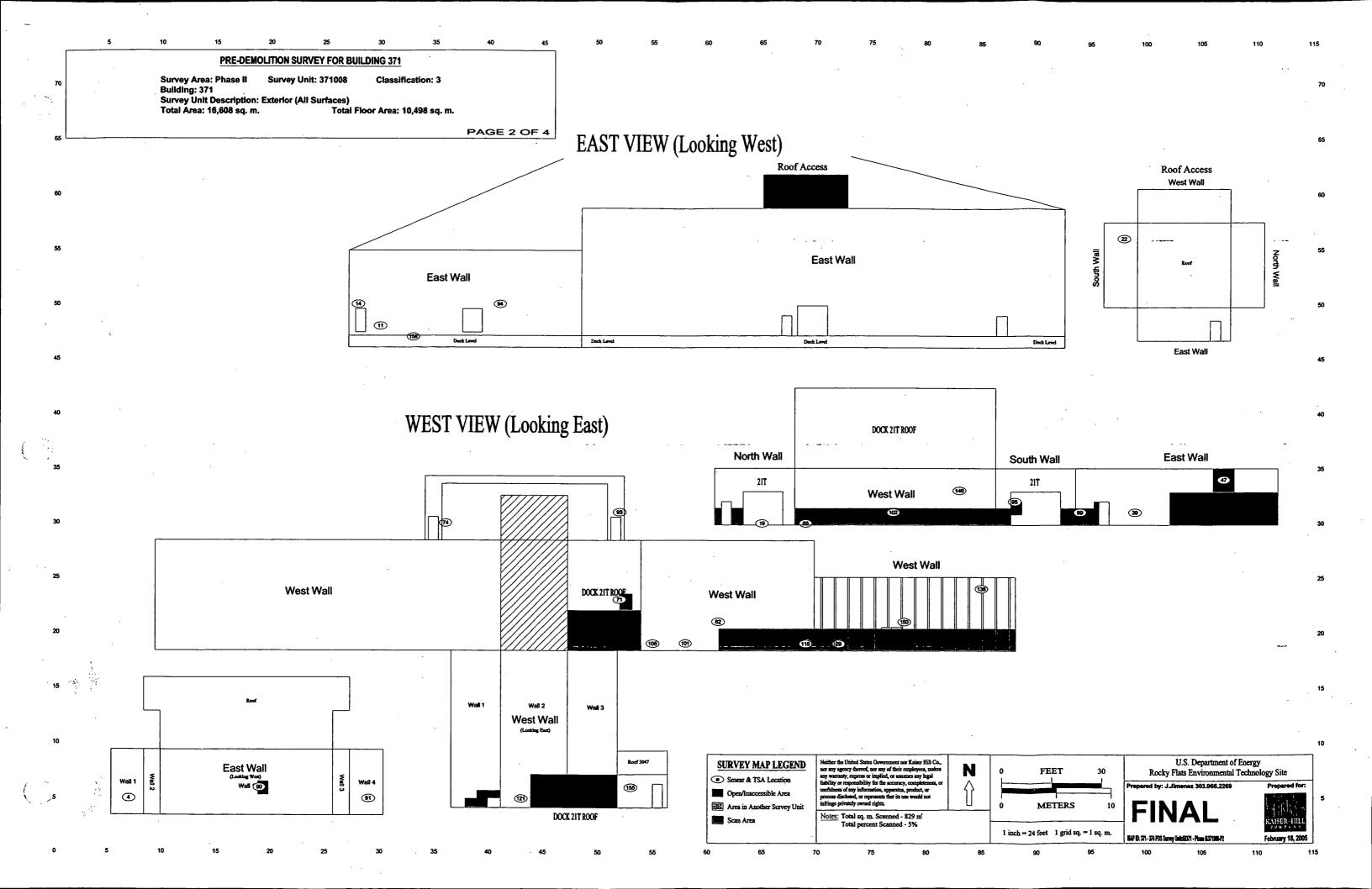
# Random/QC Total Surface Activity Data Sheet

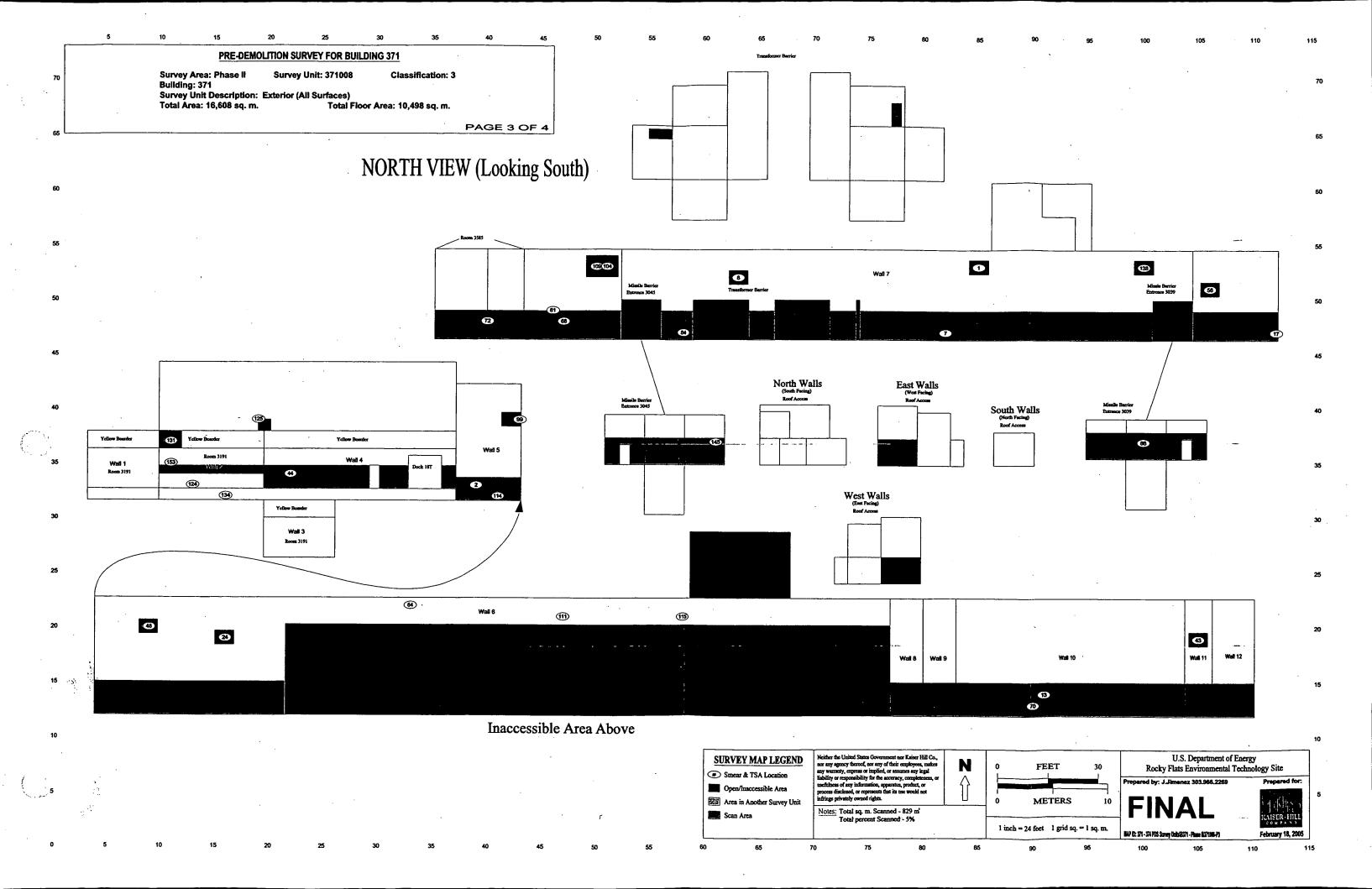
Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)		,
371008PRP-N155	12	52.9	N/A	N/A	
371008PRP-N156	2	48.8	N/A	N/A	
371008PRP-N157	8	27.2	N/A	N/A	A <b>B</b> V - 44 <b>B</b> V - 44 B
371008PRP-N158	18	42.5	N/A	N/A	

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# **ATTACHMENT H**

Survey Unit 371023

Radiological Data Summary and Survey Map

Survey Area: AP

Survey Unit: 371023

Building: 371

scription: Rooms 3187A, 3187B, and 3189 all surfaces

### **Rocky Flats Environmental Technology Site** Final Radiological Survey Summary Results

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 16

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 16

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

**Alpha** 

Maximum:

33.8 dpm/100cm<sup>2</sup>

Minimum:

-18.4 dpm/100cm<sup>2</sup>

Mean:

8.3 dpm/100cm<sup>2</sup>

Standard Deviation:

14.4

QC Maximum:

19.4 dpm/100cm<sup>2</sup>

QC Minimum:

-4.6 dpm/100cm<sup>2</sup>

QC Mean:

7.4 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

#### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 16

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 16

Nbr Biased Measurements Performed: 0

#### **Alpha**

Maximum:

12.1 dpm/100cm<sup>2</sup>

Minimum:

-1.5 dpm/100cm<sup>2</sup>

Mean:

0.5 dpm/100cm<sup>2</sup>

Standard Deviation:

3.3

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nor Random Required: 15

Nbr Biased Required: 0

Nbr Random Collected: 15

Nbr Biased Collected: 0

#### Uranium

Maximum:

NA dpm/100cm<sup>2</sup>

Minimum:

NA dpm/100cm<sup>2</sup>

Mean:

NA dpm/100cm<sup>2</sup>

Standard Deviation:

NA

Uranium DCGLw:

5,000 dpm/100cm<sup>2</sup>

Uranium DCGLEMC:

15,000 dpm/100cm<sup>2</sup>

#### **Transuranic**

Maximum:

14 dpm/100cm<sup>2</sup>

Minimum:

-1 dpm/100cm<sup>2</sup>

Mean:

3 dpm/100cm<sup>2</sup>

Standard Deviation:

5

Transuranic DCGLw:

100 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300 dpm/100cm<sup>2</sup>

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits vas conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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scription: Rooms 3187A, 3187B, and 3189 all surfaces

### **Instrument Data Sheet**

Inst/R0	T RCT	Analysis	Instr	Instru	A-Priori MD Probe Calibration Instru Efficiency (dpm/100cn		libration Instru Efficiency		Survey		
Numbe		Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре
1	511798	02/17/05	Electra	1526	DP-6	07/06/05	0.205	NA	48.0	NA	Т
2	512999	02/17/05	SAC-4	858	NA	07/06/05	0.330	NA	10.0	NA	R
3	512999 .	02/17/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	Q
5	511798	02/18/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	1
9	512999	02/19/05	Electra	1526	DP-6	07/06/05	0.205	NA	300.0	NA	s
10	512999	02/19/05	Electra	1526	DP-6	07/06/05	0.205	NA	48.0	NA	1
13	512999	02/21/05	Electra	1584	DP-6	03/28/05	0.206	NA	300.0	NA	S
14	511798	02/21/05	Electra	1505	DP-6	07/18/05	0.217	NA	300.0	NA	S
15	511798	02/21/05	Electra	261	AP-6	08/10/05	0.165	NA	300.0	NA	S
16	512999	02/22/05	Electra	261	AP-6	08/10/05	0.165	NA	300.0	NA	S
17	702381	02/23/05	Electra	244	AP-6	03/23/05	0.171	NA	300.0	NĄ	S

Survey Types: T'= Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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escription: Rooms 3187A, 3187B, and 3189 all surfaces

### **Comments Sheet**

General N/A Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples previously taken.

Comments:

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vscription: Rooms 3187A, 3187B, and 3189 all surfaces

### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371023PRP-N001	2	0.0	N/A	N/A
371023PRP-N002	2	1.5	N/A	N/A
371023PRP-N003	2	1.5	N/A	N/A
371023PRP-N004	2	0.0	N/A	N/A
371023PRP-N005	2	0.0	N/A	N/A
371023PRP-N006	2	-1.5	N/A	N/A
371023PRP-N007	2	12.1	N/A	N/A
371023PRP-N008	2	-1.5	N/A	N/A
371023PRP-N009	2	-1.5	N/A	N/A
371023PRP-N010	2	-1.5	N/A	N/A
371023PRP-N011	2	0.0	N/A	N/A
371023PRP-N012	2	0.0	N/A	N/A
371023PRP-N013	2	0.0	N/A	N/A
371023PRP-N014	2	-1.5	N/A	N/A
371023PRP-N015	2	0.0	N/A	N/A
371023PRP-N016	2	3.0	N/A	N/A

Printed On: 03/08/05 16:28

Page: 4 of 8

scription: Rooms 3187A, 3187B, and 3189 all surfaces

# Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	_
371023PRP-N001	1	24.0	N/A	N/A
371023PRP-N002	1	24.0	N/A	N/A
371023PRP-N003	1	1.1	N/A	N/A
371023PRP-N004	1	10.9	N/A	N/A
371023PRP-N005	1	7.5	N/A	N/A
371023PRP-N006	1	1.1	N/A	N/A
371023PRP-N007	1	-8.6	N/A	N/A
371023QRP-N007	3	-4.6	N/A	N/A
371023PRP-N008	1	33.8	N/A	N/A ,
371023PRP-N009	1	14.3	N/A	N/A
371023PRP-N010	1	-8.6	N/A	N/A
371023PRP-N011	1.	1.1	N/A	N/A
371023PRP-N012	1	-18.4	N/A	N/A
371023QRP-N012	3	19.4	N/A	N/A
371023PRP-N013	1	4.5	N/A	N/A
371023PRP-N014	1	20.6	N/A	N/A
371023PRP-N015	1	24.0	N/A	N/A
371023PRP-N016	1	1.1	N/A	N/A

Printed On: 03/08/05 16:28

Page: 5 of 8

scription: Rooms 3187A, 3187B, and 3189 all surfaces

### **Media Samples Data Sheet**

Site Sample ID / Nbr		Sample	Sample MDA	Weight	Surface Area	Sample Nuclide	Sample Nuclide MDA	Sample Total
Description	Nuclide	(pCi/g)		(g)	(in²)	(dpm/100cm²)	(dpm/100cm²)	(dpm/100cm²)
03D0094-001.001 101	U234	NA	NA	16.67	26.3	NA	NA	
1	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	1.4320	Î	`	0	31	Transuranic
	Am241	0.0000	0.1790			0	4	0
03D0094-002.001 102	U234	NA	NA	18.56	26.3	NA	NA	
2	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	1.1680			0	28	Transuranic
	Am241	0.0000	0.1460		:	0	4	0
03D0094-003.001 103	U234	NA	NA	6.07	26.3	NA	NA	
3	U235	NA	NA	0.07	20.0	NA NA	NA NA	Uranium
	U238	NA	NA			NA	NA	NA '
	Pu239/240	0.0000	1.3600			0	- 11	Transuranic
	Am241	0.0000	0.1700			0	1	0
J3D0094-004.001 104	U234	NA	NA	4.19	26.3	NA	NA NA	
4	U235	NA	NA			NA	NA	Uranium
	U238	NA NA	NA			NA	NA	NA
	Pu239/240	-0.1120	1.9520	'		1	11	Transuranic
	Am241	-0.0140	0.2440			0	1	-1
03D0094-005.001 105	U234	NA	NA	1.71	26.3	NA	NA NA	
5	U235	NA.	NA			NA	NA	Uranium
•	U238	NA	NA	·	,	NA	NA	NA
l	Pu239/240	1.3680	1.8560	Ì		3	4	Transuranic
	Am241	0.1710	0.2320			0	1	4
03D0094-006.001 106	U234	NA	NA	11.40	26.3	NA	NA	
6'	U235	NA	, NA			NA	NA	Uranium
	U238	NA	NA	Ì	]	NA	NA	· NA
	Pu239/240	0.8480	1.1440			13	17	Transuranic
) (**)	Am241	0.1060	0.1430			2	2	14
03D0094-007.001 107	U234	NA	NA	17.65	26.3	NA	NA	
7	U235	NA	NA	1	]	NA	NA	Uranium
·	U238	NA	NA			. NA	NA	NA
	Pu239/240	0.0000	1.3760	ļ		0	32	Transuranic
	Am241	0.0000	0.1720	İ		0	4	0

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Page: 6 of 8

ascription: Rooms 3187A, 3187B, and 3189 all surfaces

# Media Samples Data Sheet

Site Sample ID / Nbr Description			Sample	Sample MDA	Weight	Surface Area	Sample Nuclide	Sample Nuclide MDA	Sample Total
		Nuclide	(pCi/g)	(pCi/g)	(g)	(in²)	(dpm/100cm <sup>2</sup> )	(dpm/100cm²)	(dpm/100cm²)
03D0094-008.001	108	U234	NA	NA	8.40	26.3	NA 、	NA	
8		U235	NA	NA			NA	NA	Uranium
	•	U238	NA	NA			NA	NA	NA
		Pu239/240	0.3840	2.2080			4	24	Transuranic
		Am241	0.0480	0.2760			1	3	5
03D0094-009.001	109	U234	NA	NA	3.45	26.3	NA	NA	
9		U235	NA	NA			NA	NA	Uranium
		U238	NA	NA			NA	NA	NA
		Pu239/240	0.0000	2.0480			0	9	Transuranic
		Am241	0.0000	0.2560	·		0	1	0
03D0094-010.001	110	U234	NA	NA	11.04	26.3	NA	NA	
, 10		U235	NA	NA			NA	NA	Uranium
,		U238	NA	NA			NA	NA	NA
•		Pu239/240	0.0000	1.2800			0	19	Transuranic
<b>!</b>		Am241	0.0000	0.1600			0	2	0
J3D0094-011.001	111	U234	NA	NA	9.39	26.3	NA	NA	
11		U235	NA	NA			NA	· NA	Uranium
		U238	NA	NA			NA	NA	NĄ
		Pu239/240	0.0000	2.3920			0	29	Transuranic
1		Am241	0.0000	0.2990			0	4	0
	112	U234	NA	NA	9.81	26.3	NA	NA	
12		U235	NA	NA			NA	NA	Uranium
		U238	NA	NA			NA	NA	NA
		Pu239/240	0.0000	1.5440		,	0	20	Transuranic
		Am241	0.0000	0.1930			0	3	0
03D0094-013.001	113	U234	NA	NA	11.51	26.3.	NA	NA	
13		U235	NA	NA			NA	NA	Uranium
		U238	` NA	NA NA			NA NA	NA	NA
		Pu239/240	0.5840	1.5920			9	24	Transuranic
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		Am241	0.0730	0.1990	ľ		1	3	10
03D0094-014.001	114	U234	NA	NA	6.25	26.3	NA	NA	-
14		U235	NA	NA			NA	NA	Uranium
		U238	NA	NA			NA NA	NA	NA
		Pu239/240	1.5520	1.4080			13	12	Transuranic
		Am241	0.1940	0.1760			2	1	14

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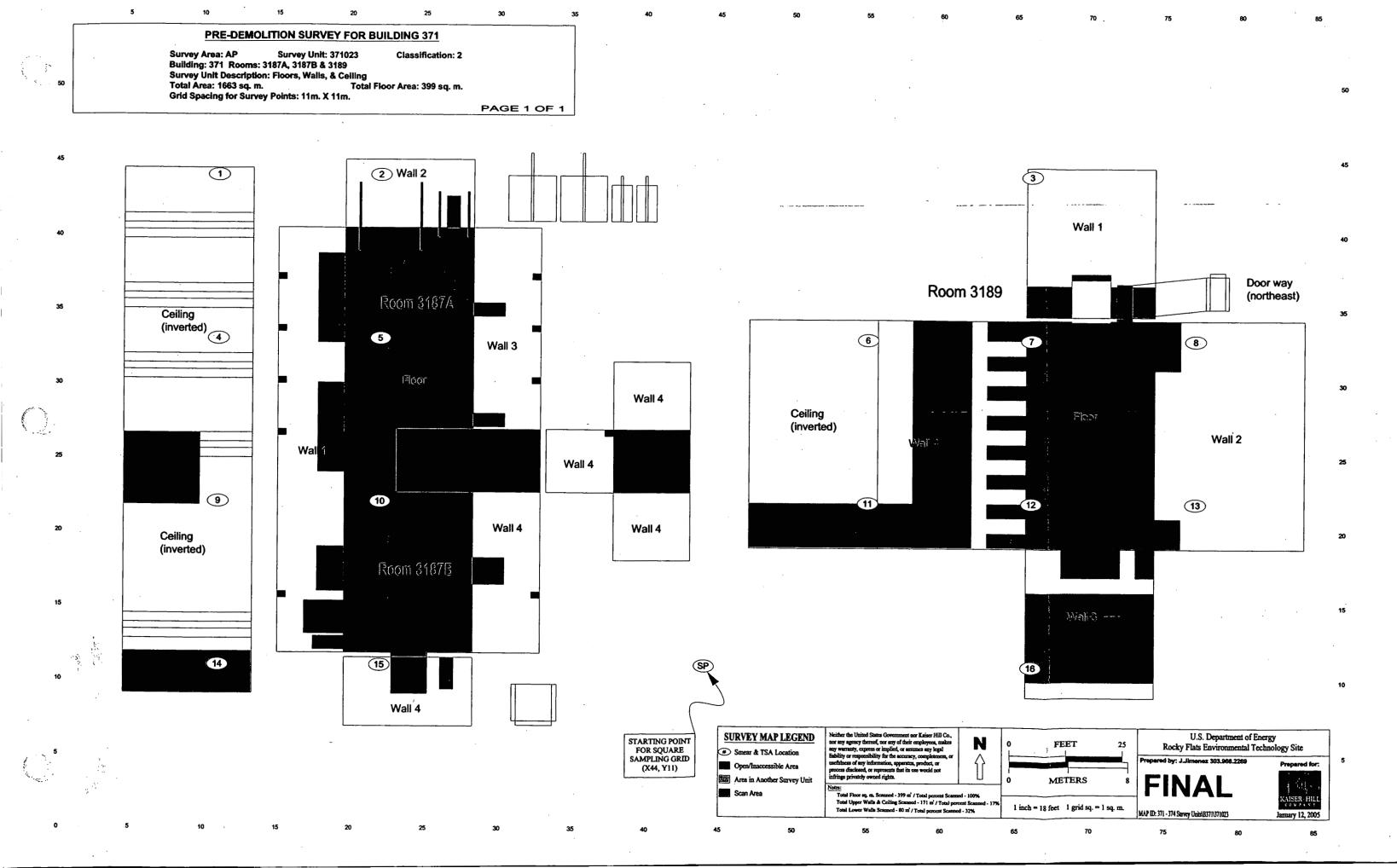
'scription: Rooms 3187A, 3187B, and 3189 all surfaces

# Media Samples Data Sheet

Site Sample ID / Nbr  Description		Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in²)	Sample Nuclide (dpm/100cm²)	Sample Nuclide MDA (dpm/100cm²)	Sample Total (dpm/100cm²)
03D0094-015.001 115 15		U234 U235 U238	NA NA NA	NA NA NA	8.96	26.3	NA NA NA	NA NA NA	Uranium NA
		Pu239/240 Am241	-0.1040 -0.0130	1.8320 0.2290		:	-1 0	22 3	Transuranic -1

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#### **PRE-DEMOLITION SURVEY FOR B371**

Survey Area: AP

Survey Unit: 371023

Classification: 2

**Building: 371 Groundfloor** 

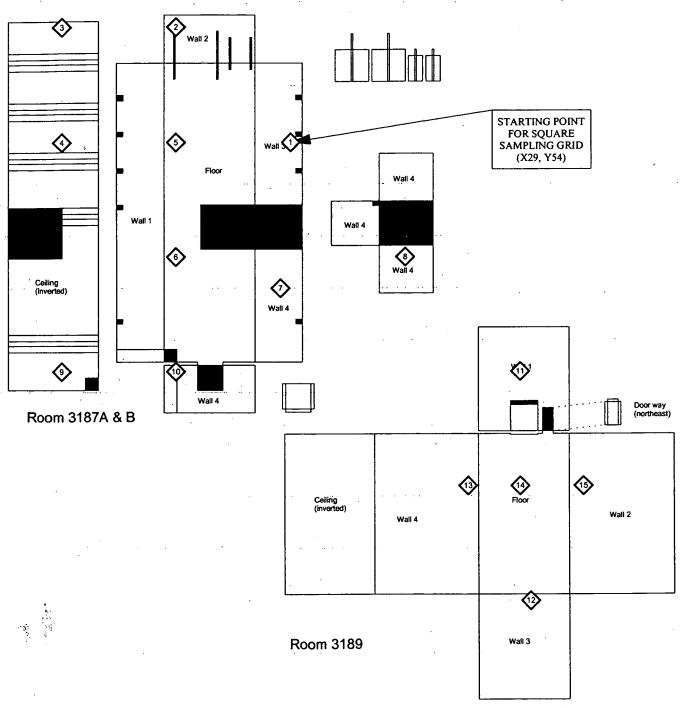
Survey Unit Description: Rooms 3187A, 3187B, 3189

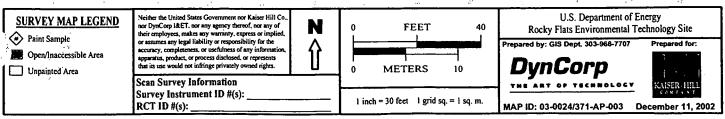
Total Area: 1672 sq. m.

Total Floor Area: 358 sq. m.

Grid Spacing for Survey Points: 11 m. X 11 m.

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# **ATTACHMENT I**

Survey Unit 371039

Radiological Data Summary and Survey Map

Survey Area: AP

Survey Unit: 371039

Building: 371

escription: Bldg. 371 Dock 18T Area (Floor Only)

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

#### **Alpha**

Maximum:

30.1 dpm/100cm<sup>2</sup>

Minimum:

-2.1 dpm/100cm<sup>2</sup>

Mean:

14.3 dpm/100cm<sup>2</sup>

Standard Deviation:

10.8

QC Maximum:

20.6 dpm/100cm<sup>2</sup>

QC Minimum:

8.6 dpm/100cm<sup>2</sup>

QC Mean:

14.6 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

#### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

#### **Alpha**

Maximum:

7.9 dpm/100cm<sup>2</sup>

Minimum:

-1.2 dpm/100cm<sup>2</sup>

Mean:

0.2 dpm/100cm<sup>2</sup>

Standard Deviation:

2.5

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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Page: 1 of 5

scription: Bldg. 371 Dock 18T Area (Floor Only)

### **Instrument Data Sheet**

Inst/RC	T RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Ef	ficiency		ri MDA (00cm²)	Survey	
Number	r ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Aipha	Beta	Туре	_
1	600323	02/17/05	Electra	1526	DP-6	07/06/05	0.205	NA	48.0	NA	T/Q	
2	513185	02/18/05	Electra	766	AP-6	04/13/05	0.198	NA	300.0	NA	S	
3	514510	02/18/05	Electra	766	AP-6	04/13/05	0.198	NA	300.0	NA	S	
4	600424	02/17/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	Т	
5	600323	02/17/05	SAC-4	858	NA	04/27/05	0.330	NA	10.0	NA	R	

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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Page: 2 of 5

scription: Bldg. 371 Dock 18T Area (Floor Only)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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scription: Bldg. 371 Dock 18T Area (Floor Only)

# **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371039PRP-N001	5	-1.2	N/A	N/A
371039PRP-N002	5	1.8	N/A	N/A
371039PRP-N003	. 5	· 7.9	N/A	N/A
371039PRP-N004	5	-1.2	N/A	N/A
371039PRP-N005	5	1.8	N/A	N/A
371039PRP-N006	5	-1.2	N/A	N/A
371039PRP-N007	·5	1.8	N/A	N/A
371039PRP-N008	5	-1.2	N/A	N/A
371039PRP-N009	5	1.8	N/A	N/A
371039PRP-N010	5	-1.2	N/A	N/A
371039PRP-N011	5	-1.2	N/A	N/A
371039PRP-N012	5	-1.2 .	N/A	N/A
371039PRP-N013	5	-1.2	N/A	N/A
371039PRP-N014	5	-1.2	N/A	N/A
371039PRP-N015	5	-1.2	N/A	N/A

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Page: 4 of 5

escription: Bidg. 371 Dock 18T Area (Floor Only)

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371039PRP-N001	1	14.0	N/A	N/A
371039QRP-N001	4	8.6	N/A	N/A
371039PRP-N002	1	10.6	N/A	N/A
371039QRP-N002	4	20.6	N/A	N/A
371039PRP-N003	1	27.1	N/A	N/A
371039PRP-N004	1	27.1	N/A	N/A
371039PRP-N005	4	26.0	N/A	N/A
371039PRP-N006	1	10.6	N/A	N/A
371039PRP-N007	1	4.2	N/A	N/A
371039PRP-N008	1	4.2	N/A	N/A
371039PRP-N009	1	30.1	N/A	N/A
371039PRP-N010	1	23.7	N/A	N/A
371039PRP-N011	1	4.2	N/A	N/A
371039PRP-N012	1	-2.1	N/A	N/A
371039PRP-N013	1	. 0.8	N/A	N/A
371039PRP-N014	1	14.0	N/A .	N/A
371039PRP-N015	1	20.3	N/A	N/A

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#### **PRE-DEMOLITION SURVEY FOR BUILDING 371**

Survey Unit: 371039

Classification: 2

Survey Area: AP Building: 371 Dock 18T

Survey Unit Description: Floor Area Only

Total Area: 99 sq. m.

Total Floor Area: 99 sq. m.

Grid Spacing for Survey Points: 3m. X 3m.

PAGE 1 OF 1

25

5

10

<sub>.</sub> 15

20

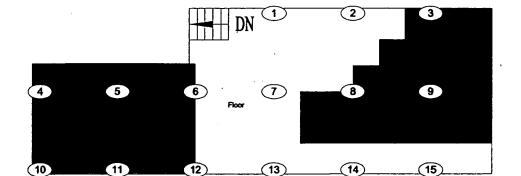
25

25

20

# DOCK 18T

20



15

10

15

10

STARTING POINT FOR SQUARE SAMPLING GRID (X8, Y9)

0

5

5

10

15

20

25

U.S. Department of Energy

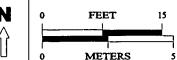
Rocky Flats Environmental Technology Site

Smear & TSA Location

Open/Inaccessible Area

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Notes: Total sq. m. Scanned - 55 m Total percent Scanned - 56%



MAP ID: 371 - 374 Survey Units/B371/371039

Prepared by: J.Jimenez 303.966.2269



SURVEY MAP LEGEND

Area in Another Survey Unit

Scan Area

**METERS** 

1 inch = 12 feet 1 grid sq. = 1 sq. m.

# **ATTACHMENT J**

Survey Unit 371046

Radiological Data Summary and Survey Map

Survey Area: AP

Survey Unit: 371046

Building: 371

scription: Bldg. 371 Room 3191 (All Surfaces)

Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

**Total Surface Activity Measurements** 

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required; 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

**Alpha** 

Maximum:

40.5 dpm/100cm<sup>2</sup>

Minimum:

-3.0 dpm/100cm<sup>2</sup>

Mean:

18.6 dpm/100cm<sup>2</sup>

Standard Deviation:

12.5

QC Maximum:

29.9 dpm/100cm<sup>2</sup>

QC Minimum:

3.9 dpm/100cm<sup>2</sup>

QC Mean:

16.9 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

**Removable Surface Activity Measurements** 

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

**Alpha** 

Maximum:

2.7 dpm/100cm<sup>2</sup>

Minimum:

-0.3 dpm/100cm<sup>2</sup>

Mean:

0.5 dpm/100cm<sup>2</sup>

Standard Deviation:

1.0

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

**Media Sample Results** 

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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Page: 1 of 5

scription: Bldg. 371 Room 3191 (All Surfaces)

### **Instrument Data Sheet**

Inst/R0	CT RCT	RCT Analysis Instr Instru Probe	Calibration	Calibration Instru Efficiency				Survey			
Numbe	=	Date	Model	S/N	Туре	Due Dt	Alpha	, Beta	Alpha	Beta	Туре
1	509284	02/07/05	Electra	296	DP-6	06/22/05	0.198	NA	48.0	NA	Т
2	509552	. 02/07/05	SAC-4	1072	NA	04/11/05	0.330	NA	10.0	ŃΑ	R
3	511510	02/07/05	Electra	1524	DP-6	04/14/05	0.219	. NA	48.0	NA	Q
4	511510	. 02/07/05	Electra	1524	DP-6	04/14/05	0.219	NA	300.0	· NA	s

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Printed On: 02/28/05 13:29

Page: 2 of 5

scription: Bldg. 371 Room 3191 (All Surfaces)

## Comments Sheet

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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Page: 3 of 5

escription: Bldg. 371 Room 3191 (All Surfaces)

## Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371046PRP-N001	2	-0.3	N/A	N/A
371046PRP-N002	2	-0.3	N/A	N/A
371046PRP-N003	2	1.2	.N/A	N/A
371046PRP-N004	2	-0.3	N/A	N/A
371046PRP-N005	2	1.2	N/A	N/A
371046PRP-N006	2	-0.3	N/A	N/A
371046PRP-N007	2.	1.2	N/A	N/A
371046PRP-N008	2	1.2	N/A	N/A
371046PRP-N009	2	2.7	N/A	N/A
371046PRP-N010	2	-0.3	N/A	N/A
371046PRP-N011	2	-0.3	N/A	N/A .
371046PRP-N012	2	1.2	N/A	N/A
371046PRP-N013	2	-0.3	N/A	N/A
371046PRP-N014	2	1.2	N/A	N/A
371046PRP-N015	2	-0.3	N/A	N/A

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Page: 4 of 5

scription: Bldg. 371 Room 3191 (All Surfaces)

## Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371046PRP-N001	1	13.7	N/A	N/A
371046PRP-N002	1	13.7	N/A	N/A
371046PRP-N003	1	13.7	N/A	N/A
371046PRP-N004	1	17.2	N/A	N/A
371046PRP-N005	1	8.7	N/A	N/A
371046QRP-N005	3	3.9	N/A	N/A
371046PRP-N006	1	17.2	N/A	N/A
371046PRP-N007	1	3.6	N/A	N/A
371046PRP-N008	1	17.2	N/A	N/A
371046PRP-N009	1	37.4	N/A	N/A
371046PRP-N010	1	40.5	N/A	N/A
371046PRP-N011	1	20.3	N/A	N/A
371046PRP-N012	1	17.2	N/A	N/A
371046PRP-N013	1	20.3	N/A	N/A
371046PRP-N014	1	40.5	N/A	N/A
371046QRP-N014	3	29.9	N/A	N/A
371046PRP-N015	. 1	-3.0	N/A	N/A

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### **PRE-DEMOLITION SURVEY FOR BUILDING 371**

Survey Area: AP

Survey Unit: 371046

Classification: 3

Building: 371 Room: 3191

Survey Unit Description: Floor, Walls, & Ceiling

Total Area: 231 sq. m.

Total Floor Area: 50 sq. m.

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U.S. Department of Energy

**SURVEY MAP LEGEND** 

Smear & TSA Location

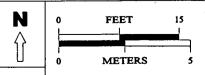
Open/Inaccessible Area

Area in Another Survey Unit

Scan Area

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Notes: Total sq. m. Scanned - 52 m
Total percent Scanned - 23%



1 inch = 12 feet 1 grid sq. = 1 sq. m.

Rocky Flats Environmental Technology Site

repared by: J.Jimenez 303.966.2269

**FINAL** 

MAP ID: 371 - 374 Survey Units/B371/371046



January 13, 2005

## ATTACHMENT K

Survey Unit 371053

Radiological Data Summary and Survey Map

Survey Area: AP

Survey Unit: 371053

Building: 371

scription: Bldg. 371, East Administrative Areas 1st floor only (Includes Main/Elec. Shops)

# Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 17

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 17

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

### **Alpha**

Maximum:

38.8 dpm/100cm<sup>2</sup>

Minimum:

-6.9 dpm/100cm<sup>2</sup>

Mean:

11.8 dpm/100cm<sup>2</sup>

Standard Deviation:

13.3

QC Maximum:

16.5 dpm/100cm<sup>2</sup>

QC Minimum:

8.2 dpm/100cm<sup>2</sup>

QC Mean:

12.4 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 17

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 17

Nbr Biased Measurements Performed: 0

### **Alpha**

Maximum:

4.2 dpm/100cm<sup>2</sup>

Minimum:

-0.3 dpm/100cm<sup>2</sup>

Mean:

0.9 dpm/100cm<sup>2</sup>

Standard Deviation:

1.2

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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scription: Bldg. 371, East Administrative Areas 1st floor only (Includes Main/Elec. Shops)

### **Instrument Data Sheet**

Inst/RCT RCT		Analysis	Instr	Instru	Probe	Calibration	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey
Numb	oer ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре
1	509552	02/19/05	Electra	761	DP-6	05/01/05	0.219	NA	48.0	NA	Т
2	511510	02/19/05	SAC-4	1072	NA	04/11/05	0.330	NA	10.0	NA	R
3	511510	02/19/05	Electra	1584	DP-6	03/28/05	0.206	NA	48.0	NA ·	T/Q
. 4	509552	02/19/05	Electra	769	AP-6	04/11/05	0.186	NA	300.0	NA	s
5	509284	02/20/05	Electra	1403	DP-6	06/29/05	0.225	NA	48.0	NA	Т
6	511510	02/20/05	Electra	769	AP-6	04/11/05	0.186	NA	300.0	NA	s
7	509552	02/21/05	Electra	1523	DP-6	07/06/05	0.205	NA	48.0	NA	т

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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Survey Area: AP

Survey Unit: 371053

Building: 371

escription: Bldg. 371, East Administrative Areas 1st floor only (Includes Main/Elec. Shops)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

**RSA** 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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of 5 Page: 3

scription: Bldg. 371, East Administrative Areas 1st floor only (Includes Main/Elec. Shops)

## **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371053PRP-N001	2	4.2	N/A	N/A
371053PRP-N002	2	1.2	N/A	N/A
371053PRP-N003	2	-0.3	N/A	N/A
371053PRP-N004	2	-0.3	N/A	N/A
371053PRP-N005	2	1.2	N/A	N/A
371053PRP-N006	2	1.2	N/A	N/A
371053PRP-N007	2	1.2	N/A	N/A
371053PRP-N008	2	-0.3	N/A	N/A
371053PRP-N009	2	1.2	N/A	N/A
371053PRP-N010	2	1.2	N/A	N/A
371053PRP-N011	2	-0.3	N/A	N/A
371053PRP-N012	2	2.7	N/A	N/A
371053PRP-N013	2	1.2	N/A	N/A
371053PRP-N014	2	1.2	N/A	N/A
371053PRP-N015	2	-0.3	N/A	N/A
371053PRP-N016	2	-0.3	N/A	N/A
371053PRP-N017	2	1.2	N/A	N/A

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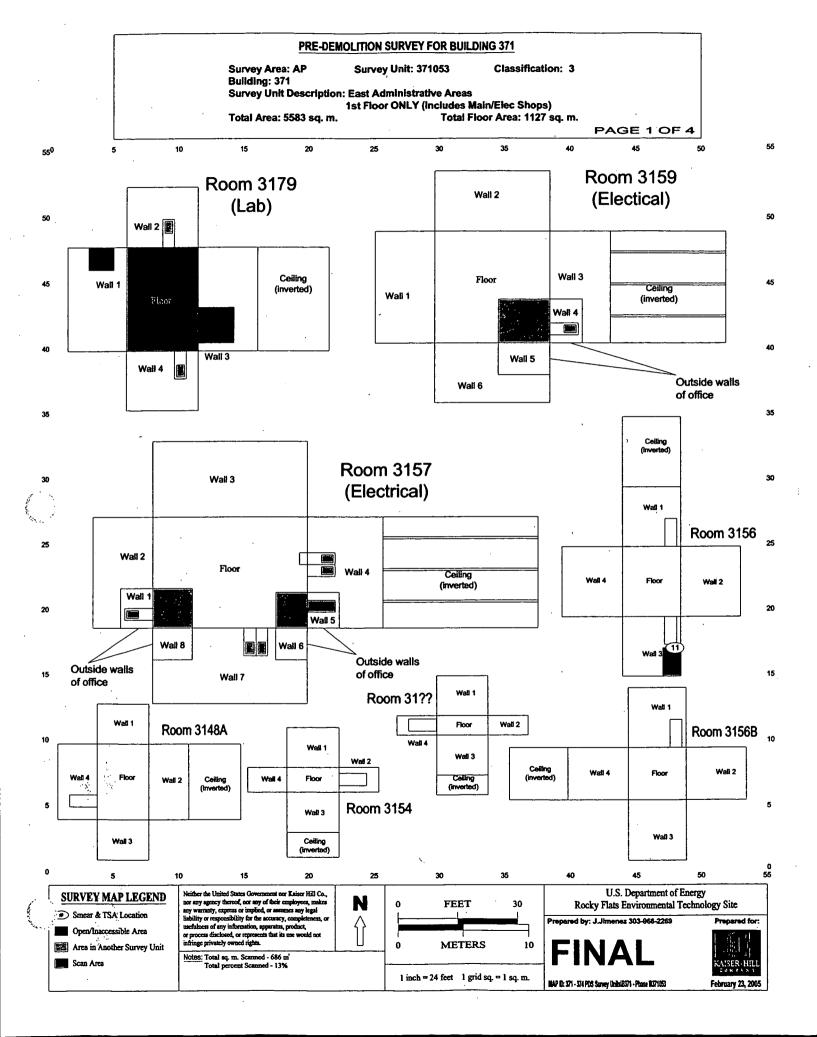
scription: Bldg. 371, East Administrative Areas 1st floor only (Includes Main/Elec. Shops)

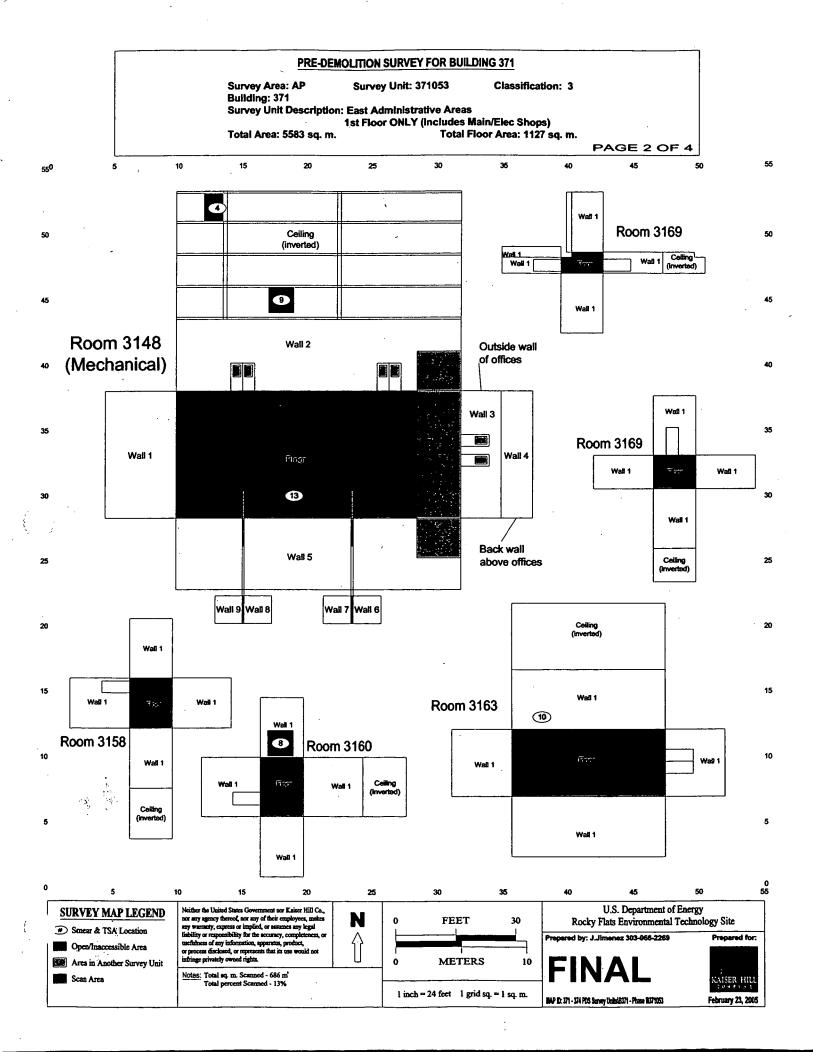
## Random/QC Total Surface Activity Data Sheet

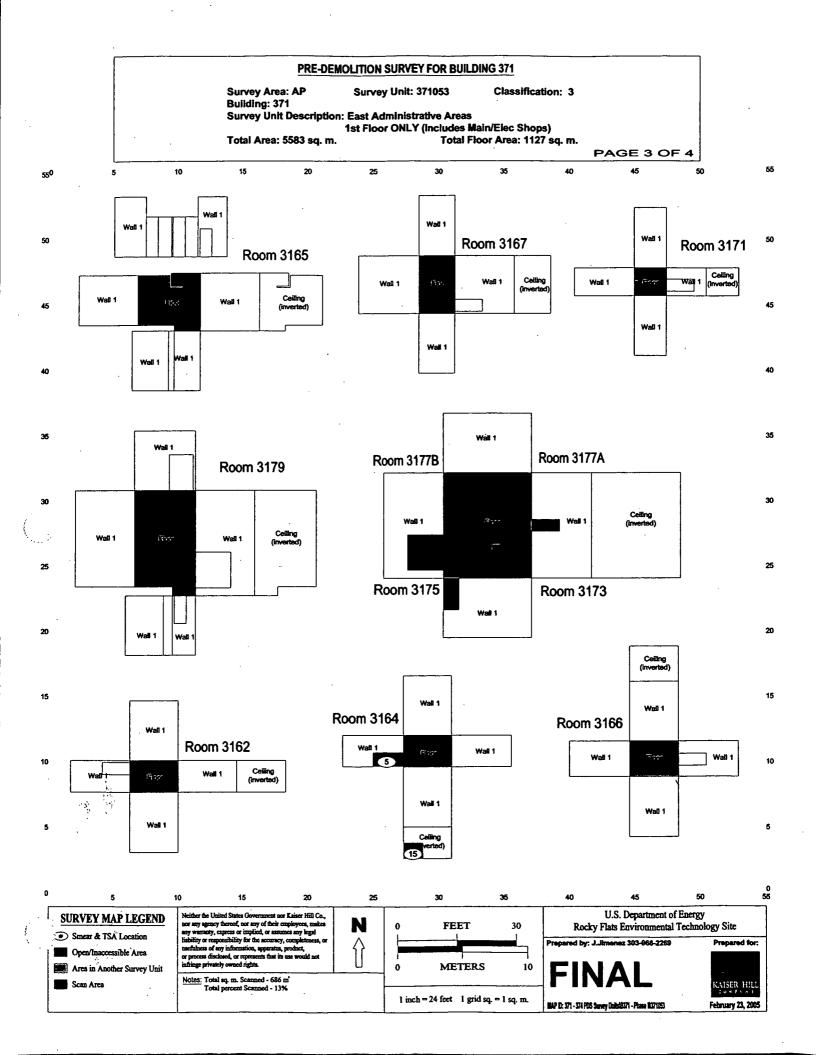
Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371053PRP-N001	1	29.6	N/A	N/A
371053PRP-N002	1	14.1	N/A	N/A
371053PRP-N003	1	14.1	N/A	N/A
371053PRP-N004	1	0.4	N/A	N/A
371053PRP-N005	1	-1.0	N/A	N/A
371053PRP-N006	1	-6.9	N/A	N/A
371053PRP-N007	1	-6.9	N/A	N/A
371053PRP-N008	1	11.4	N/A	N/A
371053PRP-N009	1	2.2	N/A	N/A
371053PRP-N010	1	9.5	N/A	N/A
371053PRP-N011	1	35.6	N/A	N/A
371053QRP-N011	3	16.5	N/A	N/A
371053PRP-N012	1	11.4	N/A	N/A
371053PRP-N013	1	11.4	N/A	N/A
371053PRP-N014	1	8.2	N/A	N/A
371053PRP-N015	1	20.5	N/A	· N/A
371053PRP-N016	1	8.2	N/A	N/A
371053PRP-N017	1	38.8	N/A	. :N/A
371053QRP-N017	3	8.2	N/A	N/A

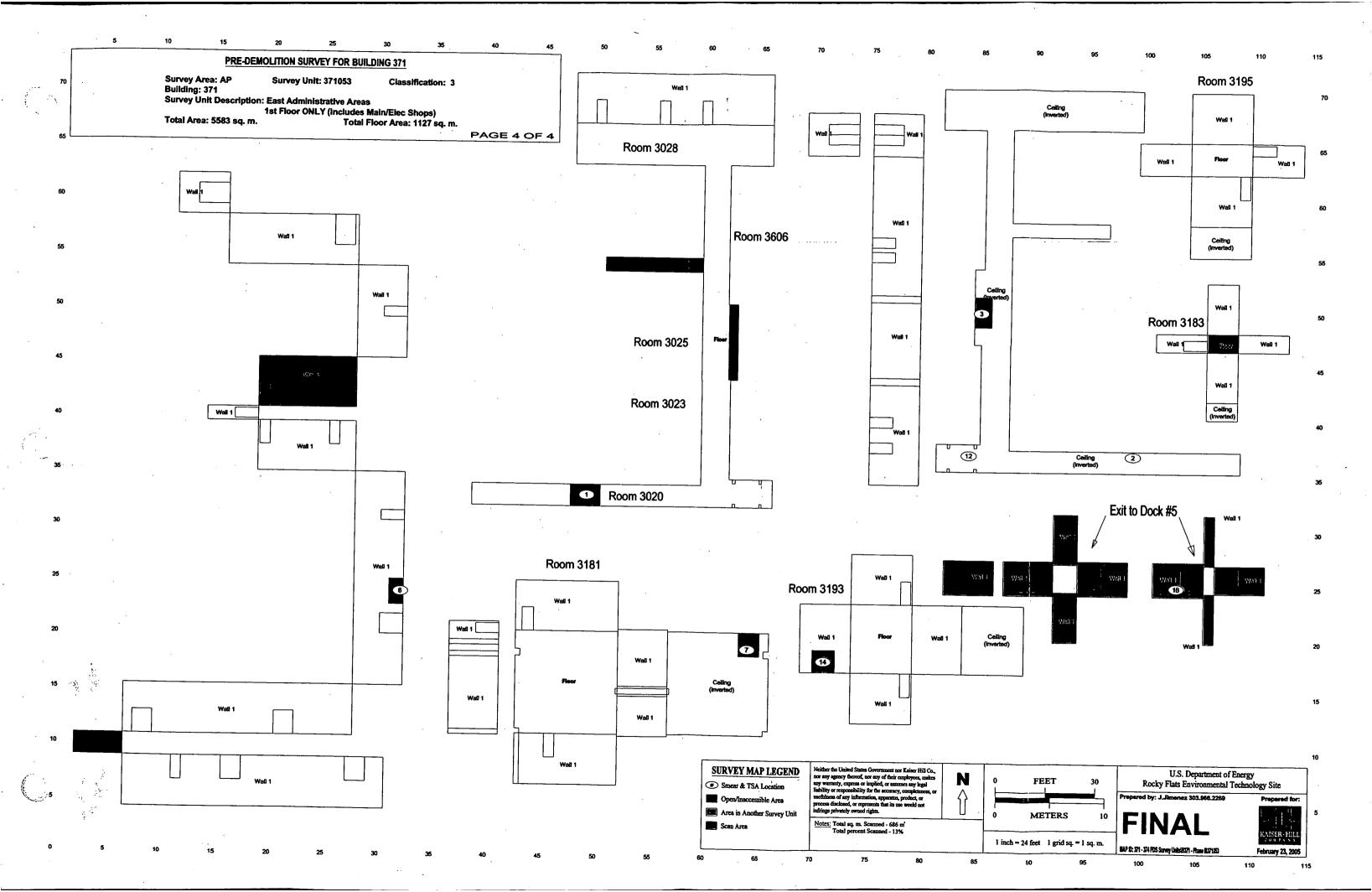
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## ATTACHMENT L

Survey Unit 371056

Radiological Data Summary and Survey Map

Survey Area: AP

Survey Unit: 371056

Building: 371

escription: Bldg. 371, Stairwell 6-7, Non-CA Only

## **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

### Alpha

Maximum:

40.9 dpm/100cm<sup>2</sup>

Minimum:

-7.0 dpm/100cm<sup>2</sup>

Mean:

12.5 dpm/100cm<sup>2</sup>

Standard Deviation:

13.3

QC Maximum:

31.1 dpm/100cm<sup>2</sup>

QC Minimum:

31.1 dpm/100cm<sup>2</sup>

QC Mean:

31.1 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLemc:

300.0 dpm/100cm<sup>2</sup>

### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

### Alpha

Maximum:

5.5 dpm/100cm<sup>2</sup>

Minimum:

-1.2 dpm/100cm<sup>2</sup>

Mean:

0.9 dpm/100cm<sup>2</sup>

Standard Deviation:

2.4

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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"escription: Bldg. 371, Stairwell 6-7, Non-CA Only

### **Instrument Data Sheet**

Inst/i	RCT RCT	CT Analysis Instr Instru		Probe	Calibration	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey	
Num		Date	Model	S/N	Турө	Due Dt	Alpha	Beta	Alpha	Beta	Type
1	701917	02/18/05	Electra	1505	DP-6	07/18/05	0.217	NA	48.0	NA	Τ.
2	701917	02/18/04	SAC-4	1072	NA	04/11/05	0.330	NA	10.0	NA	R
3	701917	02/18/05	SAC-4	1407	· NA	06/08/05	0.330	NA	10.0	NA	R
4	713312	02/18/05	Electra	768	AP-6	04/19/05	0.204	NA	300.0	NA	s
5	713312	02/18/05	Electra	775	DP-6	07/03/05	0.222	NA	48.0	NA ·	Т
6	713312	02/19/05	Electra	768	AP-6	04/19/05	0.204	NA	300.0	NA	s
7	713312	02/19/05	Electra	1403	DP-6	06/29/05	0.225	NA	48.0	NA	Q

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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Building: 371 Survey Area: AP Survey Unit: 371056

escription: Bldg. 371, Stairwell 6-7, Non-CA Only

## **Comments Sheet**

General N/A

Comments:

**TSA** 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA: 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media samples are not required for this survey unit. Media

Comments:

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scription: Bldg. 371, Stairwell 6-7, Non-CA Only

## **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371056PRP-N001	2	1.8	N/A	N/A
371056PRP-N002	3	. 2.4	N/A	N/A
371056PRP-N003	3	5.5	N/A	N/A
371056PRP-N004	2	-1.2	N/A	N/A
371056PRP-N005	3	-0.6	N/A	N/A
371056PRP-N006	2	-1.2	N/A	N/A
371056PRP-N007	2	-1.2	N/A	N/A
371056PRP-N008	2	1.8	N/A	N/A
371056PRP-N009	3	5.5	N/A	N/A
371056PRP-N010	2	-1.2	N/A	N/A
371056PRP-N011	3	-0.6	· N/A	N/A
371056PRP-N012	3	2.4	N/A	N/A
371056PRP-N013	2	-1.2	N/A	N/A
371056PRP-N014	3	-0.6	N/A	N/A
371056PRP-N015	2	1.8	N/A	N/A

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'escription: Bldg. 371, Stairwell 6-7, Non-CA Only

## Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	•
371056PRP-N001	1	-7.0	N/A	· N/A
371056PRP-N002	5	13.8	N/A	N/A
371056PRP-N003	5	13.8	N/A	N/A
371056PRP-N004	5	40.9	N/A	N/A
371056QRP-N004	7	31.1	N/A	N/A
371056PRP-N005	5	17.0	N/A	N/A
371056PRP-N006	1	5.4	N/A	N/A
371056PRP-N007	5	22.8	N/A	N/A
371056PRP-N008	5	-4.2	N/A	N/A
371056PRP-N009	1	17.9	N/A	N/A
371056PRP-N010	5	19.7	N/A	N/A
371056PRP-N011	5	26.0	N/A	N/A
371056QRP-N011	7	31.1	N/A	N/A
371056PRP-N012	1	-7.0	N/A	N/A
371056PRP-N013	1	-0.5	N/A	N/A
371056PRP-N014	1	11.4	N/A	N/A
371056PRP-N015	5	17.0	N/A	N/A

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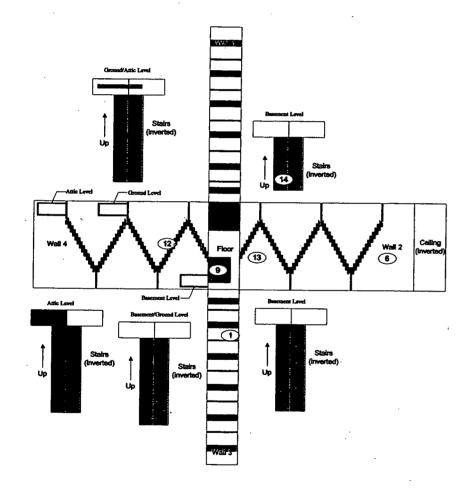
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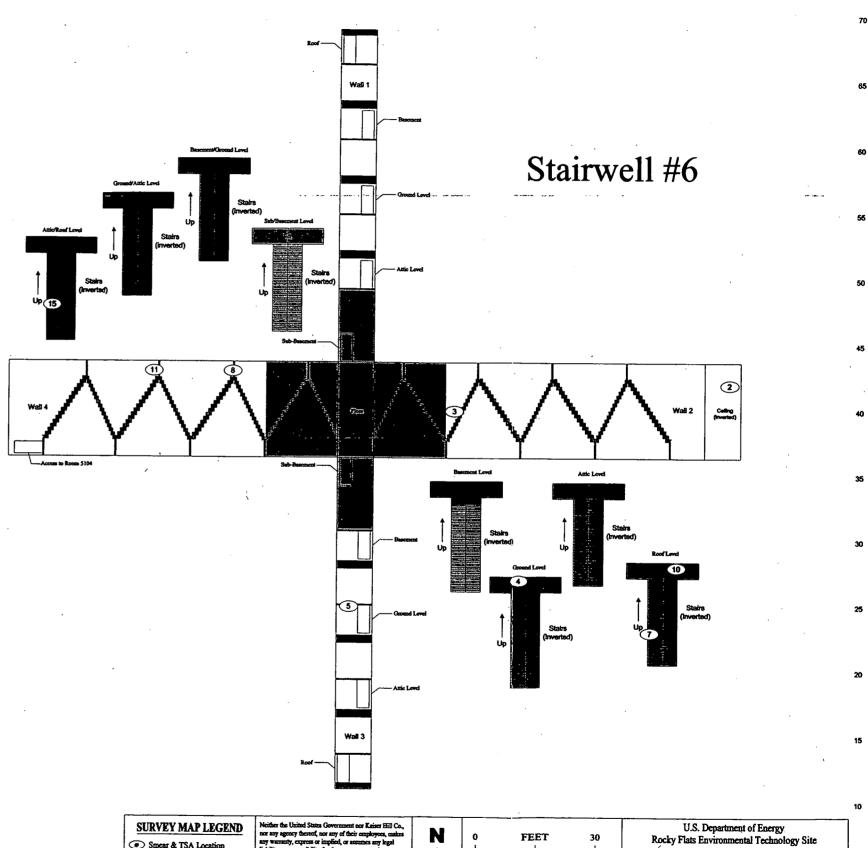
PRE-DEMOLITION SURVEY FOR BUILDING 371

Survey Area: Phase II Survey Unit: 371056 Ciassification: 3 Building: 371 Stairwells 6 & 7 Survey Unit Description: Floors, Walls, & Ceiling (above Basement Level) Total Area: 936 sq. m. Total Floor Area: 257 sq. m.

PAGE 1 OF 1

# Stairwell #7





SURVET WAY LEGEND

Smear & TSA Location

Open/Inaccessible Area

Open/Inaccessible Area

Area in Another Survey Unit

Scan Area

Notes: Total sq. m. Scanned - 277 m'

Total percent Scanned - 30%

Notes: 1 inch = 24 feet 1 grid sq. = 1 sq. m.

BAP R 68371 - Phase R071076.

# **ATTACHMENT M**

Survey Unit 371057

Radiological Data Summary and Survey Map

Survey Area: AP

Survey Unit: 371057

Building: 371

escription: Bldg. 371, Room 3185 (All Surfaces)

## **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

**Alpha** 

Maximum:

37.6 dpm/100cm<sup>2</sup>

Minimum:

-1.7 dpm/100cm<sup>2</sup>

Mean:

10.4 dpm/100cm<sup>2</sup>

Standard Deviation:

9.9

QC Maximum:

21.7 dpm/100cm<sup>2</sup>

QC Minimum:

-2.1 dpm/100cm<sup>2</sup>

QC Mean:

9.8 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

### **Alpha**

Maximum:

5.5 dpm/100cm<sup>2</sup>

Minimum:

-0.6 dpm/100cm<sup>2</sup>

Mean:

1.0 dpm/100cm<sup>2</sup>

Standard Deviation:

1.9

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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escription: Bldg. 371, Room 3185 (All Surfaces)

### **Instrument Data Sheet**

inst/R	CT RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Ef	ficiency		ri MDA 00cm²)	Survey	
Number ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре		
1	701917	02/16/05	Electra	775	DP-6	07/03/05	0.222	NA	48.0	NA	Т	
2	713312	02/16/05	Electra	763	DP-6	05/16/05	0.223	NA	48.0	NA	Q	
3	713312	02/16/05	Electra	125	AP-6	02/18/05	0.166	NA	300.0	NA	S	
4	701917	02/16/05	SAC-4	1072	NA .	04/11/05	0.330	NA	10.0	NA	R	
5	701917	02/16/05	SAC-4	1407	NA	06/08/05	0.330	NA	10.0	NA	R	

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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escription: Bldg. 371, Room 3185 (All Surfaces)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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'escription: Bldg. 371, Room 3185 (All Surfaces)

## **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371057PRP-N001	4	2.7	N/A	N/A
371057PRP-N002	5	-0.6	N/A	N/A
371057PRP-N003	4	-0.3	N/A	N/A
371057PRP-N004	5	-0.6	N/A	N/A .
371057PRP-N005	4	0.3	N/A	N/A
371057PRP-N006	5	5.5	N/A	N/A
371057PRP-N007	4	-0.3	N/A	· N/A
371057PRP-N008	5	2.4	N/A	N/A
371057PRP-N009	4	2.7	N/A	N/A
371057PRP-N010	5	-0.6	N/A	N/A
371057PRP-N011	4	2.7	N/A	N/A
371057PRP-N012	5	-0.6	N/A	N/A
371057PRP-N013	4	-0.3	N/A	N/A
371057PRP-N014	5	2.4	N/A	N/A
371057PRP-N015	4	-0.3	N/A	N/A

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Page: 4 of 5

escription: Bldg. 371, Room 3185 (All Surfaces)

## Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371057PRP-N001	1	7,4	N/A	N/A
371057PRP-N002	2	-1.7	N/A	N/A
371057PRP-N003	2	16.2	· N/A	N/A
371057PRP-N004	2	1.4	N/A	N/A
371057PRP-N005	2	10.4	N/A	N/A
371057PRP-N006	1	37.6	N/A	N/A
371057QRP-N006	2 .	21.7	N/A	N/A
371057PRP-N007	2	7.2	N/A	N/A
371057PRP-N008	1	16.4	N/A	N/A
371057QRP-N008	2	-2.1	N/A	N/A
371057PRP-N009	2	7.2	N/A	N/A
371057PRP-N010	2	1.4	N/A	N/A
371057PRP-N011	1	1.5	N/A	N/A
371057PRP-N012	2	16.2	N/A	N/A
371057PRP-N013	2	10.4	N/A	N/A
371057PRP-N014	1	19.5	, N/A	N/A
371057PRP-N015	1	4.7	N/A	N/A

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### **PRE-DEMOLITION SURVEY FOR BUILDING 371**

Survey Area: AP

Survey Unit: 371057

20

Classification: 3

30

Building: 371 Room: 3185

Survey Unit Description: Floor, Walls, & Ceiling

15

Total Area: 667 sq. m.

10

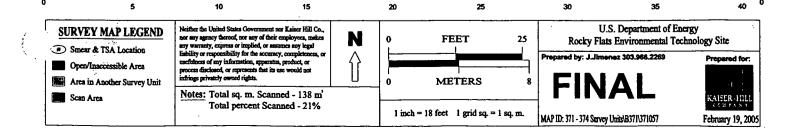
Total Floor Area: 207 sq. m.

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35

(12) 11) 25 1 2185 Wall 2 15 2 (13) 4 3 7 Wall 3



3

# **ATTACHMENT N**

Survey Unit 371058

Radiological Data Summary and Survey Map

Survey Unit: 371058 Building: 371 Survey Area: AP

Pescription: Bldg. 371, Elevator #1-

## **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 16

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 16

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

**Alpha** 

Maximum:

32.7 dpm/100cm<sup>2</sup>

Minimum:

-6.2 dpm/100cm<sup>2</sup>

Mean:

10.3 dpm/100cm<sup>2</sup>

Standard Deviation:

QC Maximum:

21.0 dpm/100cm<sup>2</sup>

QC Minimum:

3.1 dpm/100cm<sup>2</sup>

QC Mean:

12.1 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

Transuranic DCGLEMC:

100.0 dpm/100cm<sup>2</sup> 300.0 dpm/100cm<sup>2</sup>

### Removable Surface Activity Measurements

Nbr Random Measurements Required: 16

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 16

Nbr Biased Measurements Performed: 0

### Alpha

Maximum:

4.9 dpm/100cm<sup>2</sup>

Minimum:

-1.2 dpm/100cm<sup>2</sup>

Mean:

0.6 dpm/100cm<sup>2</sup>

Standard Deviation:

1.9

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

### **Media Sample Results**

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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ascription: Bldg. 371, Elevator #1

### **Instrument Data Sheet**

Inst/RCT RCT		Analysis	Instr	Instru	Probe	Calibration	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey	
Num		Date	Model	S/N	Туре	Due Dt .	Alpha	Beta	Alpha	Beta	Туре	
1	511654	02/20/05	Electra	1593	DP-6	04/04/05	0.223	NA	48.0	NA	T/Q	
2	511654	02/20/05	SAC-4	858	NA	04/27/05	0.330	NA	10.0	NA	R	
3	511654	02/20/05	SAC-4	1497	NA	06/09/05	0.330	NA	10.0	NΑ	R	
4	511654	02/20/05	SAC-4	985	NA	05/15/05	0.330	NA	10.0	NA	R	
5	702355	02/20/05	Electra	775	DP-6	07/03/05	0.222	NA	48.0	NA	Т	
6	702355	02/20/05	Electra	244	AP-6	03/23/05	0.171	NA	300.0	NA:	s	
7	702355	02/21/05	Electra	768	AP-6	04/19/05	0.204	NA	300.0	NA	s	

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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escription: Bldg. 371, Elevator #1

### **Comments Sheet**

General N/A Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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scription: Bldg. 371, Elevator #1

## **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371058PRP-N001	2	4.9	N/A	N/A
371058PRP-N002	3	-0.6	N/A	N/A
371058PRP-N003	4	-1.2	N/A	N/A
371058PRP-N004	2	-1.2	N/A	N/A
371058PRP-N005	3	3.9	N/A	N/A
371058PRP-N006	4	1.8	N/A	N/A
371058PRP-N007	2	1.8	N/A	N/A
371058PRP-N008	3	2.4	N/A	N/A
371058PRP-N009	4	-1.2	N/A	N/A
371058PRP-N010	2	0.3	N/A	N/A
371058PRP-N011	3	-0.6	N/A	N/A
371058PRP-N012	4	-1.2	N/A	N/A
371058PRP-N013	2	0.3	N/A	N/A
371058PRP-N014	3	0.9	N/A	N/A
371058PRP-N015	4	0.3	N/A	N/A
371058PRP-N016	2	-1.2	N/A	N/A

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'escription: Bldg. 371, Elevator #1

## Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371058PRP-N001	1	2.8	. N/A	N/A
371058QRP-N002	1	3.1	N/A	N/A
371058PRP-N002	. 5	30.0	N/A	N/A
371058PRP-N003	5	14.7	N/A	N/A
371058PRP-N004	5	-6.0	N/A	N/A
371058PRP-N005	5	5.7	N/A	N/A
371058PRP-N006	5	8.8	N/A	N/A
371058PRP-N007	5	8.8	N/A	N/A
371058PRP-N008	5	5.7	N/A	N/A
371058PRP-N009	5	32.7	N/A	N/A
371058PRP-N010	5	3.0	. N/A	N/A
371058PRP-N011	5	32.7	N/A	N/A
371058PRP-N012	5	8.8	N/A	N/A
371058PRP-N013	1	-3.5	N/A	N/A
371058PRP-N014	5	-3.3	N/A	N/A
371058QRP-N015	1	21.0	N/A	N/A
371058PRP-N015	5	30.0	N/A	N/A
371058PRP-N016	1	-6.2	N/A	N/A

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### PRE-DEMOLITION SURVEY FOR BUILDING

Survey Area: AP

Survey Unit: 371058

Classification: 2

Building: 371 Elevator Shaft #1

Survey Unit Description: Floor, Walls, & Ceiling

Total Area: 284 sq. m.

Total Ceiling Area: 22 sq. m.

Grid Spacing for Survey Points: 4m. X 4m.

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**Elevator Shaft** (1) 3 4 6 5 7 West Wa 8 9 10 11 13 14 16 (12) STERVE) WEEKE! (XXIII) EEMED. CONTRACT. STUDIE Exi-STARTING POINT FOR SQUARE SAMPLING GRID (X5, Y11)

## **SURVEY MAP LEGEND**

Smear & TSA Location

Open/Inaccessible Area Area 6 foot below Final Grade

Scan Area

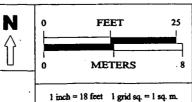
Neither the United States Govern resines the function of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or the way and the press of management of the security, completions any warranty, express or management, completions in mechanics of any information, appearant, product, or process disclosed, or represents that its use would not infringe privately owned rights.

Scanned - 82:

15

10

Notes: Total sq. m. Scanned - 82 m Total percent Scanned - 29%



25

20

U.S. Department of Energy Rocky Flats Environmental Technology Site

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Prepared by: J.Jimenez 303.968.2269

February 1, 2005

NAP ED: 371 - 374 Survey Units/837/1371058

# **ATTACHMENT O**

Survey Unit 371065

Radiological Data Summary and Survey Map

Survey Area: AF

Survey Unit: 371065

Building: 371

escription: Bldg. 371, Basement Admin Area.

# Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 19

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 19

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

**Alpha** 

Maximum:

69.8 dpm/100cm<sup>2</sup>

Minimum:

-5.9 dpm/100cm<sup>2</sup>

Mean:

27.5 dpm/100cm<sup>2</sup>

Standard Deviation:

20.9

QC Maximum:

22.9 dpm/100cm<sup>2</sup>

QC Minimum:

16.9 dpm/100cm<sup>2</sup>

QC Mean:

19.9 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

, 17d110d1d1110 200211

300.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

Removable Surface Activity Measurements

Nbr Random Measurements Required: 19

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 19

Nbr Biased Measurements Performed: 0

**Alpha** 

Maximum:

2.4 dpm/100cm<sup>2</sup>

Minimum:

-0.6 dpm/100cm<sup>2</sup>

Mean:

0.3 dpm/100cm<sup>2</sup>

Standard Deviation:

1.2

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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escription: Bldg. 371, Basement Admin Area.

### **Instrument Data Sheet**

Inst/RCT RCT		Analysis Date	Instr	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey	
Number ID	Model		Alpha				Beta	Alpha	Beta	Туре		
1	509284	02/15/05	Electra	1584	DP-6	03/28/05	0.206	NA	48.0	NA	Т	
2	509552	02/15/05	Electra	1524	DP-6	04/14/05	0.219	NA	48.0	NA	Q	
3	509284	02/15/05	Electra	292	DP-6	03/28/05	0.218	· NA	300.0	NA	s	
4	511510	02/16/05	Electra	4380	DP-6	07/03/05	0.225	. NA	300.0	NA	s	
5	511510	02/15/05	SAC-4	1427	NA	06/08/05	0.330	NA	10.0	NA	R	

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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escription: Bldg. 371, Basement Admin Area.

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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'escription: Bldg. 371, Basement Admin Area.

### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	,
371065PRP-N001	5	2.4	N/A	N/A
371065PRP-N002	5	0.9	N/A	N/A
371065PRP-N003	5	0.9	N/A	N/A
371065PRP-N004	5	-0.6	N/A	N/A
371065PRP-N005	. 5	-0.6	N/A	N/A
371065PRP-N006	5	-0.6	N/A	N/A
371065PRP-N007	5	-0.6	N/A	N/A
371065PRP-N008	5	-0.6	, N/A	N/A
371065PRP-N009	5	0.9	N/A	N/A
371065PRP-N010	5	-0.6	N/A	N/A
371065PRP-N011	5	0.9	N/A	N/A
371065PRP-N012	5	-0.6	N/A	N/A
371065PRP-N013	5	2.4	N/A	N/A
371065PRP-N014	5	2.4	N/A	N/A
371065PRP-N015	5	2.4	N/A	N/A
371065PRP-N016	5	-0.6	N/A	N/A
371065PRP-N017	5	-0.6	N/A	N/A
371065PRP-N018	5	-0.6	N/A	N/A
371065PRP-N019	5	-0.6	N/A	N/A

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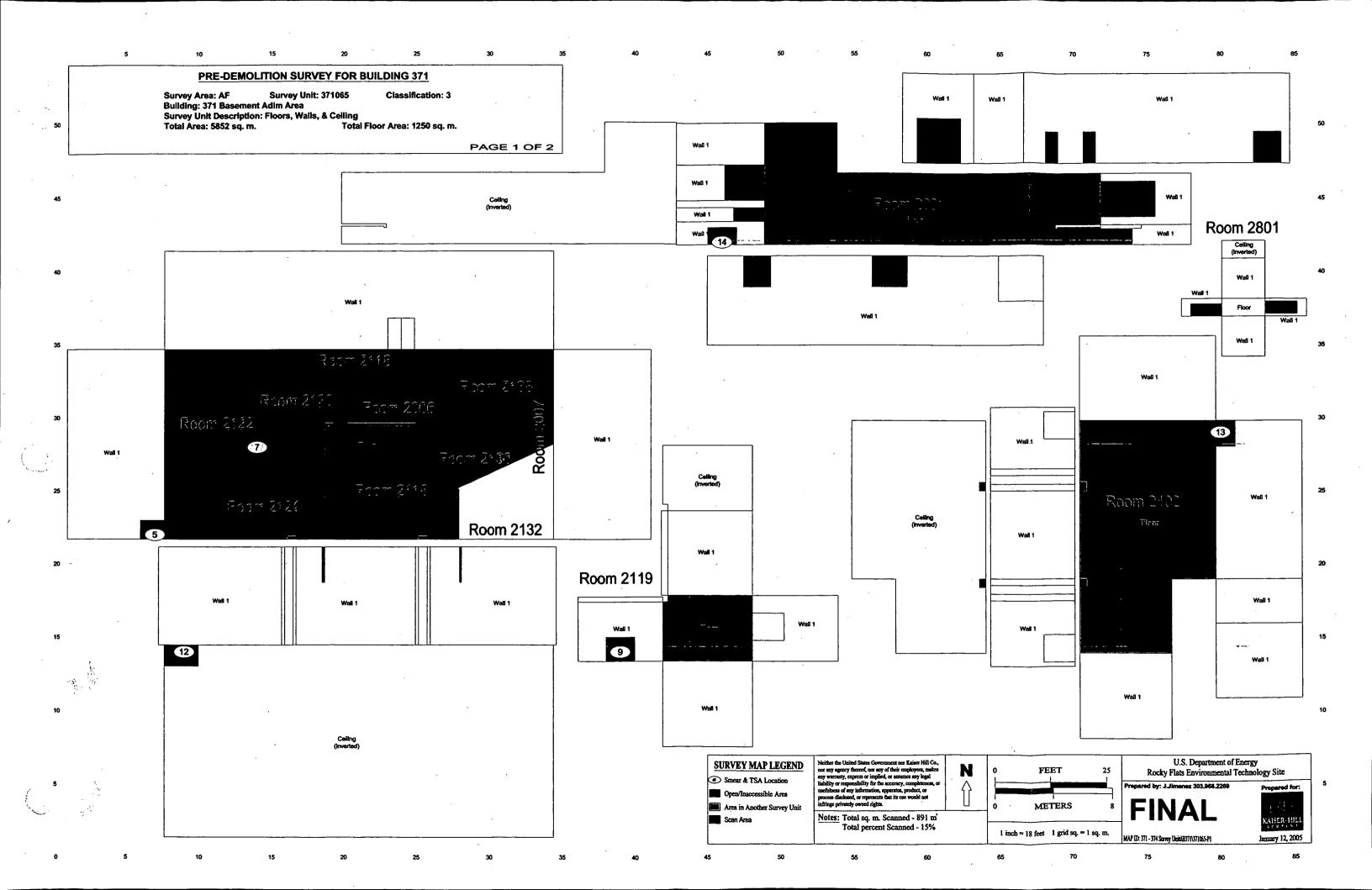
escription: Bldg. 371, Basement Admin Area.

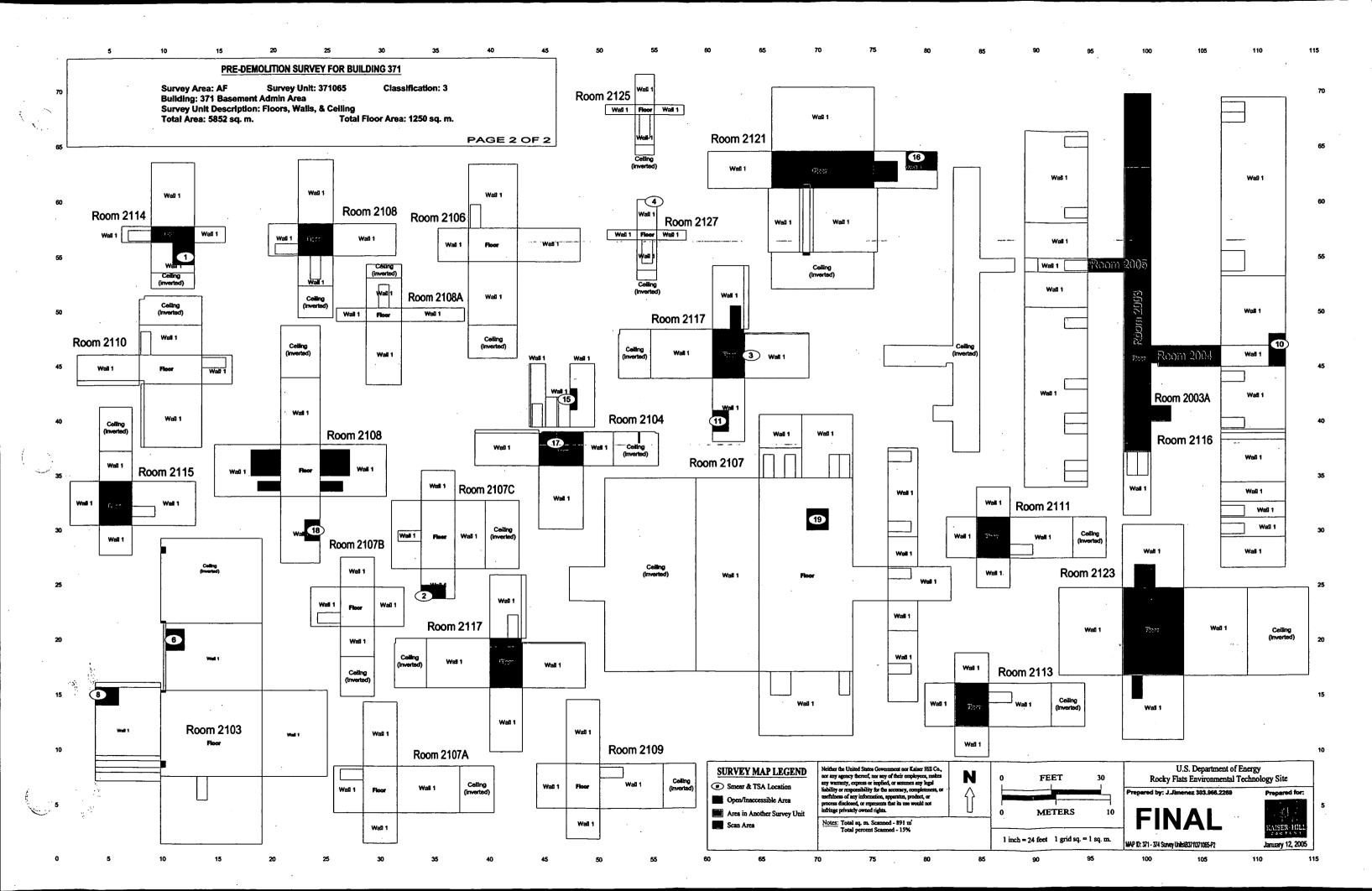
### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371065PRP-N001	1	. 45.6	N/A	N/A
371065PRP-N002	1	55.3	N/A	N/A
371065PRP-N003	1	29.6	N/A	N/A
371065PRP-N004	1	23.2	N/A	N/A
371065PRP-N005	1	35.9	N/A	N/A
371065PRP-N006	1	35.9	N/A	N/A
371065PRP-N007	1	33.0	N/A	. N/A
371065QRP-N007	2	16.9	N/A	N/A
371065PRP-N008	1	13.5	N/A	N/A
371065PRP-N009	1	-5.9	N/A	N/A
371065PRP-N010	1	16.4	N/A	N/A
371065PRP-N011	1	3.8	N/A	N/A
371065QRP-N011	2 ′	22.9	N/A	N/A
371065PRP-N012	1	69.8	N/A	N/A
371065PRP-N013	1	42.7	N/A	N/A
371065PRP-N014	1	6.7	N/A	N/A
371065PRP-N015	1	13.5	N/A	N/A
371065PRP-N016	1	26.2	N/A	N/A
371065PRP-N017	1	0.4	N/A	N/A
371065PRP-N018	1	16.4	N/A	N/A
371065PRP-N019	1	60.1	N/A	N/A

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## **ATTACHMENT P**

Survey Unit 371066

Radiological Data Summary and Survey Map

Survey Area: AM

Survey Unit: 371066

Building: 371

\*scription: Bldg. 371, Rooms 4101, 4102, 4103, 4104, 4105, & 4106 (All Surfaces)

# Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 10

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 10

Nbr QC Performed: 2

**Alpha** 

Maximum:

36.8 dpm/100cm<sup>2</sup>

Minimum:

-12.6 dpm/100cm<sup>2</sup>

Mean:

10.4 dpm/100cm<sup>2</sup>

Standard Deviation:

10.5

QC Maximum:

44.2 dpm/100cm<sup>2</sup>

QC Minimum:

19.9 dpm/100cm<sup>2</sup>

QC Mean:

32.1 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

#### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 10

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 10

#### **Alpha**

Maximum:

6.1 dpm/100cm<sup>2</sup>

Minimum:

-1.5 dpm/100cm<sup>2</sup>

Mean:

0.4 dpm/100cm<sup>2</sup>

Standard Deviation:

1.7

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### **Media Sample Results**

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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escription: Bldg. 371, Rooms 4101, 4102, 4103, 4104, 4105, & 4106 (All Surfaces)

### **Instrument Data Sheet**

Inst/RCT RCT		Analysis	Instr	Instru	Probe	Calibration	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey
Numbe	r ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре
1	600323	02/03/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	T
2	515011	02/03/05	Electra	292	DP-6	03/28/05	0.218	NA	48.0	NA	Q
3	515011	02/03/05	SAC-4	858	NA	04/27/05	0.330	NA	10.0	NA	R
4	515011	02/03/05	SAC-4	972	NA	02/05/05	0.330	NA	10.0	NA	R
5	515011	02/03/05	SAC-4	985	NA	05/15/05	0.330	NA	10.0	NA	R
6	515011	02/03/05	SAC-4	1078	NA	04/11/05	0.330	NA	10.0	NA	R
7	600323	02/04/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	Т
8	702381	02/04/05	Electra	766	AP-6	04/13/05	0.198	NA ·	300.0	NA	S
10	600323	02/04/05	SAC-4	985	NA	05/15/05	0.330	NA	10.0	NA	R
12	508194	02/06/05	Electra	766	AP-6	04/13/05	0.198	NA	300.0	NA	· s
13	511510	03/07/05	Electra	1368	DP-6	04/20/05	0.220	NA	48.0	NA	Τ
14	509552	03/07/05	Electra	769	AP-6	04/11/05	0.186	NA	300.0	NA	S
15	509284	03/07/05	SAC-4	858	NA	04/27/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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ascription: Bldg. 371, Rooms 4101, 4102, 4103, 4104, 4105, & 4106 (All Surfaces)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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ascription: Bldg. 371, Rooms 4101, 4102, 4103, 4104, 4105, & 4106 (All Surfaces)

### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371066PRP-N001	4	-1.5	N/A	N/A
371066PRP-N002	`4	6.1	N/A	N/A
371066PRP-N003	5	1.2	N/A	N/A
371066PRP-N004	6	-1.2	N/A	N/A
371066PRP-N005	3	-1.2	N/A	N/A
371066PRP-N006	4	-1.5	N/A	N/A
371066PRP-N007	5	1.2	N/A	N/A
371066PRP-N008	6	0.3	N/A	N/A
371066PRP-N009	3	0.3	N/A	N/A
371066PRP-N010	3	-1.2	, N/A	N/A
371066PRP-N011	4	3.0	N/A	N/A
371066PRP-N012	. 10	-0.3	N/A	N/A
371066PRP-N013	10	1.2	N/A	N/A
371066PRP-N014	10	-0.3	N/A	N/A
371066PRP-N015	5	-0.3	N/A	N/A

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'scription: Bldg. 371, Rooms 4101, 4102, 4103, 4104, 4105, & 4106 (All Surfaces)

### **Biased Removable Surface Activity Data Sheet**

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371066PBP-N016	15	-0.9	N/A	N/A
371066PBP-N017	15	0.6	N/A	N/A
371066PBP-N018	15	2.1	N/A	· N/A
371066PBP-N019	15	-0.9	N/A	N/A
371066PBP-N020	15	2.1	N/A	N/A
371066PBP-N021	15	0.6	N/A	N/A
371066PBP-N022	15	-0.9	N/A	N/A
371066PBP-N023	15	-0.9	N/A	N/A
371066PBP-N024	15	0.6	N/A	N/A
371066PBP-N025	15	.0.6	N/A	N/A

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'escription: Bldg. 371, Rooms 4101, 4102, 4103, 4104, 4105, & 4106 (All Surfaces)

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371066PRP-N001	1	11.0	N/A	N/A
371066QRP-N001	2	44.2	N/A	N/A
371066PRP-N002	1	-11.0	N/A	N/A
371066QRP-N002	2	19.9	N/A	N/A
371066PRP-N003	1	-3.7	N/A	N/A
371066PRP-N004	1	11.0	N/A	N/A
371066PRP-N005	1	8.3	N/A	N/A
371066PRP-N006	7	6.5	N/A	N/A
371066PRP-N007	1	5.2	N/A	N/A
371066PRP-N008	1	11.0	N/A	N/A
371066PRP-N009	1	-6.8	N/A	N/A
371066PRP-N010	1	-0.6	N/A	N/A
371066PRP-N011	1	11.0	N/A	N/A
371066PRP-N012	. 7	19.8	N/A	N/A
371066PRP-N013	7	11.0	N/A	N/A
371066PRP-N014	7	-12.6	N/A	N/A
371066PRP-N015	1	11.0	N/A	N/A

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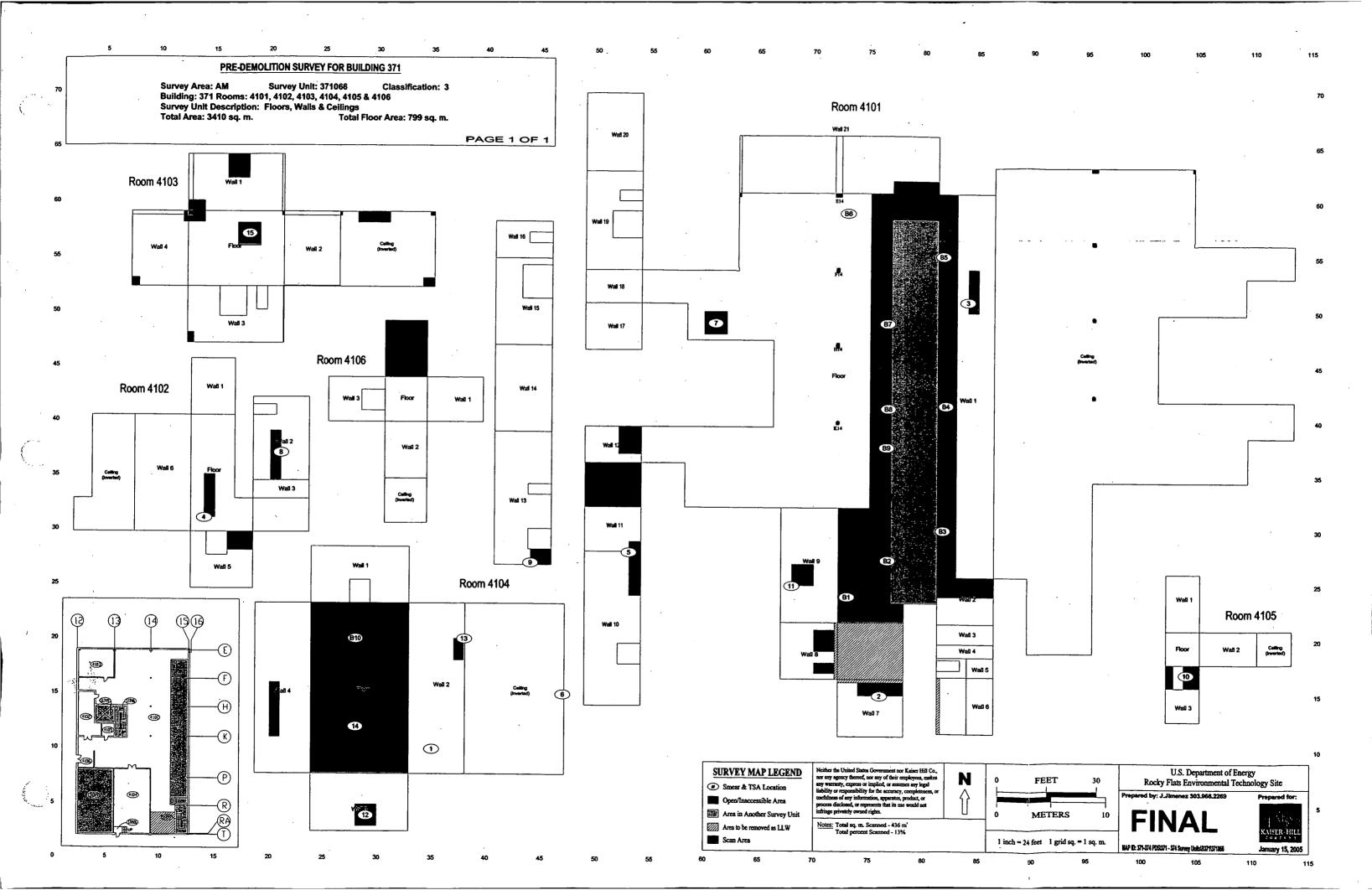
escription: Bldg. 371, Rooms 4101, 4102, 4103, 4104, 4105, & 4106 (All Surfaces)

### **Biased Total Surface Activity Data Sheet**

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371066PBP-N016	14	15.3	N/A	N/A
371066PBP-N017	14	11.6	. N/A	N/A
371066PBP-N018	14	4.6	N/A	N/A
371066PBP-N019	14	2.4	N/A	N/A
371066PBP-N020	14	36.8	N/A	N/A
371066PBP-N021	14	22.3	N/A	N/A
371066PBP-N022	14	23.9	N/A	N/A
371066PBP-N023	14	9.9	N/A	Ņ/A
371066PBP-N024	14	22.3	N/A	N/A
371066PBP-N025	14	18.5	N/A	N/A

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# **ATTACHMENT Q**

Survey Unit 371073

Radiological Data Summary and Survey Map

Survey Unit: 371073 Building: 371 Survey Area: AM

ascription: Bldg. 371, Room 4101 (Bermed Area)

### **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 22

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 22

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

Alpha

Maximum:

41.2 dpm/100cm<sup>2</sup>

Minimum:

-4.7 dpm/100cm<sup>2</sup>

. Mean:

18.8 dpm/100cm<sup>2</sup>

Standard Deviation:

12.8

QC Maximum:

25.2 dpm/100cm<sup>2</sup>

QC Minimum:

15.2 dpm/100cm<sup>2</sup>

QC Mean:

20.2 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLemc:

300.0 dpm/100cm<sup>2</sup>

#### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 22

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 22

Nbr Biased Measurements Performed: 0

#### **Alpha**

Maximum:

2.4 dpm/100cm<sup>2</sup>

Minimum:

-0.6 dpm/100cm<sup>2</sup>

Mean:

0.3 dpm/100cm<sup>2</sup>

Standard Deviation:

1.1

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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scription: Bldg. 371, Room 4101 (Bermed Area)

### **Instrument Data Sheet**

Inst/i	RCT RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey	
Number ID		Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре	-
1	511798	02/06/05	Electra	292	DP-6	03/28/05	0.218	NA	48.0	NA	T/Q	
2	512999	02/06/05	Electra	1821	DP-6	06/07/05	0.214	NA	48.0	NA	T/Q	
3	511798	02/10/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	Т	
4	511798	02/11/05	Electra	292	DP-6	03/28/05	0.218	NA	48.0	NA	Т	
6	512999	02/10/05	SAC-4	858	NA	05/18/05	0.330	NA	10.0	NA	R	
7	512999	02/11/05	Electra	1821	DP-6	06/07/05	Ò.214	NA	300.0	NA	s	

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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ascription: Bldg. 371, Room 4101 (Bermed Area)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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escription: Bldg. 371, Room 4101 (Bermed Area)

### Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371073PRP-N001	6	-0.6	· N/A	N/A
371073PRP-N002	6	-0.6	N/A	N/A
371073PRP-N003	6	-0.6	N/A	N/A
371073PRP-N004	6	0.9	N/A	N/A
371073PRP-N005	6	-0.6	N/A	N/A
371073PRP-N006	6	0.9	N/A	N/A
371073PRP-N007	6	0.9	N/A	N/A
371073PRP-N008	6	-0.6	N/A	N/A
371073PRP-N009	6	2.4	N/A	N/A
371073PRP-N010	6	0.9	N/A	N/A
371073PRP-N011	6	-0.6	N/A	N/A
371073PRP-N012	6	-0.6	N/A	N/A
371073PRP-N013	6	-0.6	N/A	N/A
371073PRP-N014	6	0.9	N/A	N/A
371073PRP-N015	6	0.9	N/A	N/A
371073PRP-N016	6	0.9	N/A	N/A
371073PRP-N017	6	-0.6	N/A	N/A
371073PRP-N018	6	2.4	N/A	N/A
371073PRP-N019	6	-0.6	N/A	N/A
371073PRP-N020	6	-0.6	N/A	N/A.
371073PRP-N021	6	2.4	· N/A	N/A
371073PRP-N022	6	-0.6	N/A	N/A

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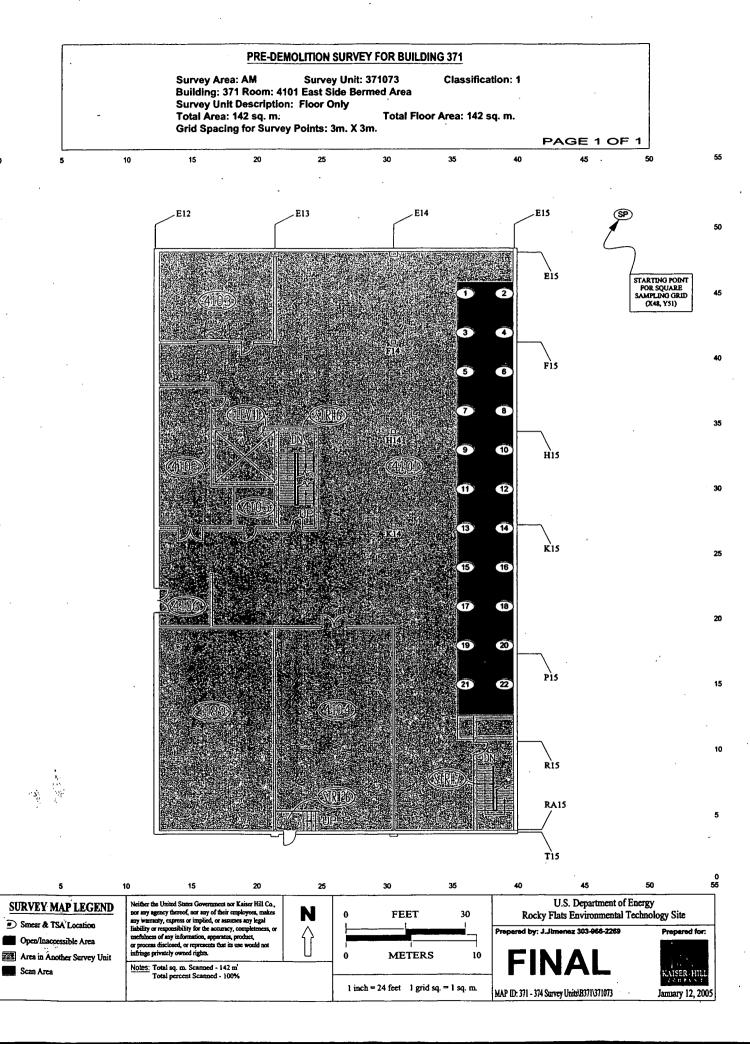
escription: Bldg. 371, Room 4101 (Bermed Area)

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371073PRP-N001	1	34.7	N/A	N/A
371073PRP-N002	2	14.2	N/A	N/A
371073PRP-N003	1	19.6	N/A	N/A
371073PRP-N004	2	39.0	N/A	N/A
371073PRP-N005	1	19.6	N/A	N/A
371073PRP-N006	2	4.9	N/A	N/A
371073PRP-N007	1	22.8	N/A	N/A
371073PRP-N008	2	14.2	N/A	N/A
371073PRP-N009	1	16.4	N/A	N/A
371073PRP-N010	2	10.9	N/A	N/A
371073PRP-N011	1	19.6	N/A	N/A
371073PRP-N012	2	-1.7	N/A	N/A
371073PRP-N013	1	32.0	N/A	N/A
371073QRP-N013	2	25.2	N/A	N/A
371073PRP-N014	2	7.7	N/A	N/A
371073PRP-N015	1	10.4	N/A	N/A
371073QRP-N016	1	15.2	N/A	N/A
371073PRP-N016	2	29.6	N/A	N/A
371073PRP-N017	1	-4.7	N/A	N/A
371073PRP-N018	2	32.9	N/A	N/A
371073PRP-N019	1	41.2	N/A	N/A
,371073PRP-N020	2	17.0	N/A	N/A
371073PRP-N021	1	28.8	N/A	N/A
371073PRP-N022	2	4.9	N/A	N/A

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## ATTACHMENT R

Survey Unit 371074

Radiological Data Summary and Survey Map

escription: Bldg. 371, Room 3168 (Decon room)

# Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 16

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 16

Nbr Biased Measurements Performed: 0'

Nbr QC Performed: 2

**Alpha** 

Maximum:

80.1 dpm/100cm<sup>2</sup>

Minimum:

-24.3 dpm/100cm<sup>2</sup>

Mean:

13.6 dpm/100cm<sup>2</sup>

Standard Deviation:

22.0

QC Maximum:

28.4 dpm/100cm<sup>2</sup>

QC Minimum:

2.7 dpm/100cm<sup>2</sup>

QC Mean:

15.6 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 16

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 16

Nbr Biased Measurements Performed: 0

#### **Alpha**

Maximum:

3.9 dpm/100cm<sup>2</sup>

Minimum:

-1.2 dpm/100cm<sup>2</sup>

Mean:

0.0 dpm/100cm<sup>2</sup>

Standard Deviation:

1.6

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### **Media Sample Results**

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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scription: Bldg. 371, Room 3168 (Decon room)

### **Instrument Data Sheet**

Inst/RCT RCT		Analysis	Instr	Instru	Probe	Calibration	Instru Efficiency ,		A-Priori MDA (dpm/100cm²)		Survey
Numbe	er ID	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Type
1	508194	02/16/05	Electra	1526	DP-6	07/06/05	0.205	NA	48.0	NA	Т
2	600961	02/16/05	Electra	1584	DP-6	03/28/05	0.206	NA	48.0	NA	T/Q
3	701917	02/17/05	Electra	4380	DP-6	07/03/05	0.225	NA	48.0	NA	Т
4	713312	02/17/05	Electra	264	AP-6	04/11/05	0.195	NA	300.0	NA	s
5	508194	02/16/05	SAC-4	858	NA	04/27/05	0.330	NA	10.0	NA	R
6	508194	02/16/05	SAC-4	1497	NA	06/09/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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'escription: Bldg. 371, Room 3168 (Decon room)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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escription: Bldg. 371, Room 3168 (Decon room)

### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)			
371074PRP-N001	5	-1.2	N/A	N/A	1	
371074PRP-N002	6	2.4	N/A	N/A		
371074PRP-N003	5	-1.2	N/A	N/A		
371074PRP-N004	6	-0.6	N/A	N/A		
371074PRP-N005	5	0.3	N/A	N/A		
371074PRP-N006	6	-0.6	N/A	N/A		
371074PRP-N007	5	-1.2	N/A	N/A		
371074PRP-N008	. 6	-0.6	N/A	N/A		
371074PRP-N009	5	-1.2	N/A	N/A		
371074PRP-N010	6	. 0.9	N/A	N/A		
371074PRP-N011	5	-1.2	N/A	N/A		
` 371074PRP-N012	6	3.9	N/A	N/A		
371074PRP-N013	5	-1.2	N/A	N/A		
371074PRP-N014	6	2.4	N/A	N/A		
371074PRP-N015	5	-1.2	N/A	N/A		
371074PRP-N016	6	0.9	N/A	N/A		

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scription: Bldg. 371, Room 3168 (Decon room)

### Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371074PRP-N001	2	-1.5	N/A	N/A
371074PRP-N002	1	2.1	N/A	N/A
371074PRP-N003	2	1.9	N/A	N/A
371074PRP-N004	2	11.6	N/A	N/A
371074PRP-N005	1	31.4	N/A	N/A
371074QRP-N005	2	28.4	N/A	N/A
371074PRP-N006	2	17.9	N/A	N/A
371074PRP-N007	2	8.2	N/A	N/A
371074PRP-N008	2	1.9	N/A	N/A
371074PRP-N009	1	2.1	N/A	N/A
371074PRP-N010	1	-24.3	N/A	N/A
371074PRP-N011	1	27.9	N/A	N/A
371074PRP-N012	1	80.1	N/A	N/A
371074PRP-N013	1	8.4	N/A	N/A
371074QRP-N013	2	2.7	N/A	N/A
371074PRP-N014	1	13.3	N/A	N/A
371074PRP-N015	1	21.6	N/A	N/A
371074PRP-N016	1	14.8	N/A	N/A

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#### PRE-DEMOLITION SURVEY FOR BUILDING 371

Survey Area: AP Survey Unit: 371074 Classification: 2

Building: 371 Room: 3168 Decon Room Survey Unit Description: Floor, Walls, & Ceiling

Total Floor Area: 11 sq. m. Total Area: 74sq. m.

Grid Spacing for Survey Points: 2m. X 2m.

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25

5

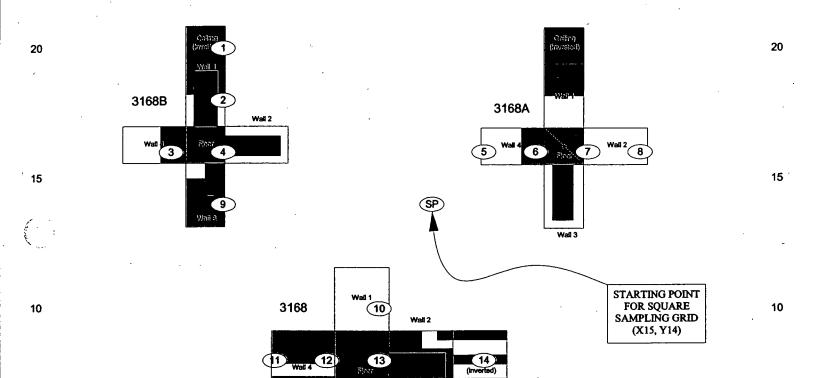
10

15

20

25

. 25



3168B 25 5 10 15 20

#### SURVEY MAP LEGEND

Smear & TSA Location

Open/Inaccessible Area

Area in Another Survey Unit

Scan Area

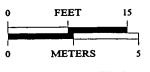
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Neither the United States Government nor Kaiser Hill Co. any warranty, express or implied, or earners with the same ser illustrative or responsibility for the accuracy, compusefulness of any information, apparatus, produ

Total Floor sq. m. Scanned - 11 m' / Total percent Scanned - 100% Total Lower Walls Scanned - 15 m' / Total percent Scanned - 34% Total Upper Walls & Ceiling Scan - 12 m' / Total percent Scanned - 60%



15



1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy Rocky Flats Environmental Technology Site

3168A



3168

MAP ID: 371 - 374 Survey Units/B371/371074

## **ATTACHMENT S**

Survey Unit 371081

Radiological Data Summary and Survey Map

Survey Area: AF

Survey Unit: 371081

Building: 371

escription: Bldg. 371, Room 2101 (All Surfaces)

### **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

#### Alpha

Maximum:

47.6 dpm/100cm<sup>2</sup>

Minimum:

-1.0 dpm/100cm<sup>2</sup>

Mean:

18.8 dpm/100cm<sup>2</sup>

Standard Deviation:

15.0

QC Maximum:

13.3 dpm/100cm<sup>2</sup>

QC Minimum:

7.5 dpm/100cm<sup>2</sup>

QC Mean:

10.4 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

### Removable Surface Activity Measurements

Nbr Random Measurements Required: 15

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15

Nbr Biased Measurements Performed: 0

#### Alpha

Maximum:

7.9 dpm/100cm<sup>2</sup>

Minimum:

1.8 dpm/100cm<sup>2</sup>

Mean:

4.3 dpm/100cm<sup>2</sup>

Standard Deviation:

2.1

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### **Media Sample Results**

Nbr Random Required: 15

Nbr Biased Required: 0

Nbr Random Collected: 15

Nbr Biased Collected: 0

#### Uranium

Maximum:

NA dpm/100cm<sup>2</sup>

Minimum:

NA dpm/100cm<sup>2</sup>

Mean:

NA dpm/100cm<sup>2</sup>

Standard Deviation:

NA

Uranium DCGLw:

5,000 dpm/100cm<sup>2</sup>

Uranium DCGLEMC:

15,000 dpm/100cm<sup>2</sup>

#### **Transuranic**

Maximum:

4 dpm/100cm<sup>2</sup>

Minimum:

0 dpm/100cm<sup>2</sup>

Mean:

1 dpm/100cm<sup>2</sup>

Standard Deviation:

Transuranic DCGLw:

100 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300 dpm/100cm<sup>2</sup>

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits vas conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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escription: Bldg. 371, Room 2101 (All Surfaces)

### **Instrument Data Sheet**

Inst/RCT RCT Number ID		Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey
							Alpha	Bèta	Alpha	Beta	Туре
1	514510	02/13/05	Electra	264	AP-6	04/11/05	0.195	NA	300.0	NA	S
2	702381	02/14/05	Electra	1584	DP-6	03/28/05	0.206	NA	48.0	NA	Т
3	515011	02/14/05	Electra	1144	DP-6	05/29/05	0.227	NA	48.0	NA	Q
4	702381	02/14/05	SAC-4	1072	NA	04/11/05	0.330	NA	10.0	NA	R
6	511798	02/14/05	Electra	292	DP-6	03/28/05	0.218	NA	48.0	NA	1
7	713312	02/14/05	Electra	1505	DP-6	07/18/05	0.217	NA	300.0	NA	S
8	701917	02/14/05	Electra	125	AP-6	02/18/05	0.166	· NA	300.0	NA	S
10	512999	02/14/05	Electra	1821	DP-6	06/07/05	0.214	NA	300.0	NA	. <b>S</b>
12	511798	02/15/05	Electra	292	DP-6	03/28/05	0.218	NA	48.0	NA	. 1
14	512999	02/15/05	Electra	1821	DP-6	06/07/05	0.214	NA	300.0	NA	S
16	511798	02/16/05	Electra	292	DP-6	03/28/05	0.218	NA	300.0	NA	s

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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escription: Bldg. 371, Room 2101 (All Surfaces)

### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media 15 Samples grouped together into 8 samples to be counted

Comments:

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escription: Bldg. 371, Room 2101 (All Surfaces)

### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371081PRP-N001	4	4.9	N/A	N/A
371081PRP-N002	4	4.9	N/A	N/A
371081PRP-N003	4	1.8	, N/A	N/A
371081PRP-N004	4	7.9	N/A	N/A
371081PRP-N005	4	1.8	N/A	N/A
371081PRP-N006	4	4.9	N/A	N/A
371081PRP-N007	4	4.9	N/A	N/A .
371081PRP-N008	4	4.9	· N/A	N/A
371081PRP-N009	4	4.9	, N/A	N/A
371081PRP-N010	4	1.8	N/A	N/A
371081PRP-N011	4	7.9	N/A	N/A
371081PRP-N012	4	1.8	N/A	N/A
371081PRP-N013	4	1.8	N/A	N/A
371081PRP-N014	4	4.9	N/A	N/A
371081PRP-N015	4	4.9	N/A	N/A

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escription: Bldg. 371, Room 2101 (All Surfaces)

# Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net: Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371081PRP-N001	2	8.7	N/A	·N/A
371081PRP-N002	2	8.7	N/A	N/A
371081PRP-N003	2	-1.0	N/A	N/A
371081PRP-N004	2	12.1	N/A	N/A
371081PRP-N005	2	37.9	N/A	N/A
371081PRP-N006	2	21.8	N/A	N/A
371081PRP-N007	2	12.1	N/A	N/A ·
371081PRP-N008	2	-1.0	, N/A	N/A
371081PRP-N009	2	17.0	N/A	N/A
371081PRP-N010	2	18.4	N/A	N/A
371081PRP-N011	2	34.5	N/A	N/A
371081PRP-N012	2	47.6	N/A	N/A
371081QRP-N012	3	13.3	N/A	N/A
371081PRP-N013	2	8.7	N/A	N/A
371081PRP-N014	2	15.0	N/A	N/A
371081PRP-N015	2	41.3	N/A	N/A
371081QRP-N015	3	7.5	· N/A	N/A

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Pescription: Bldg. 371, Room 2101 (All Surfaces)

# **Media Samples Data Sheet**

Site Sample ID / Nbr		Sample	Sample MDA	Weight	Surface Area	Sample Nuclide	Sample Nuclide MDA	Sample Total
Description	Nuclide	(pCi/g)	(pCi/g)	(g)	(in²)	(dpm/100cm²)	(dpm/100cm²)	(dpm/100cm²)
05Z0795-016.001 101	U234	NA	NA	36.70	26.3	NA	NA	
-001.001, -002.001, -	U235	NA	NA			NA	NA	Uranium
003.001	U238	NA	NA			NA	` NA	NA
[	Pu239/240	0.0000	1.8000			0	86	Transuranic
	Am241	0.0000	0.2250	ļ, <b> </b>		` 0	11	0
05Z0795-017.001 102	U234	NA	NA	42.70	26.3	NA	NA	
-004.001	U235	NA	NA			NA	NA	Uranium
·	U238	NA	NA			NA NA	NA	NA
	Pu239/240	0.0689	0.5136			4	29	Transuranic
·	· Am241	0.0086	0.0642			1	4	4
05Z0795-018.001 103	U234	NA	NA	32.90	26.3	NA	NA	
-005.001, -006.001	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.7568			· 0	33	Transuranic
	Am241	0.0000	0.0946		,	0	4	. 0
J5Z0795-019.001 104	U234	. NA	NA	35.10	26.3	NA	NA	
-008.001, -009.001	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.7224			0	33	Transuranic
	Am241	0.0000	0.0903			0	4	0
05Z0795-020.001 105	U234	NA	NA	37.00	26.3	NA	NA	
-010.001, -013.001	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	0.6848			0	33	Transuranic
	. Am241	0.0000	0.0856			0	4	0
05Z0795-021.001 106	U234	ŅA	NA	33.80	26.3	· NA	NA	
-014.001	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	. NA	NA
:	Pu239/240	0.0000	0.7168			0	32	Transuranic
20 - 20 - 20 - 20 - 20 - 20 - 20 - 20 -	Am241	0.0000	0.0896			0	4	0
05Z0795-022.001 107	U234	NA	NA	32.80	26.3	NA	NA	
-011.011, -012.001, -	U235	NA	NA			NA	NA	Uranium
007.001	U238	NA	. NA			NA	NA	NA
	Pu239/240	0.0000	1.4400			0	62	Transuranic
	Am241	0.0000	0.1800			0	8	0 '

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escription: Bldg. 371, Room 2101 (All Surfaces)

# Media Samples Data Sheet

Site Sample ID / Nbr  Description	Nuclide	Sample (pCi/g)	Sample MDA (pCi/g)	Weight (g)	Surface Area (in²)	Sample Nuclide (dpm/100cm²)	Sample Nuclide MDA (dpm/100cm²)	Sample Total (dpm/100cm²)
05Z0795-023.001 108	U234	NA	NA	11.80	26.3	NA	NA	
-015.001	U235	NA	NA			NA	NA	Uranium
	U238	NA	NA			NA	NA	NA
	Pu239/240	0.0000	5.2080	·		0	80	Transuranic
	Am241	0.0000	0.6510		,	0	10	0 .

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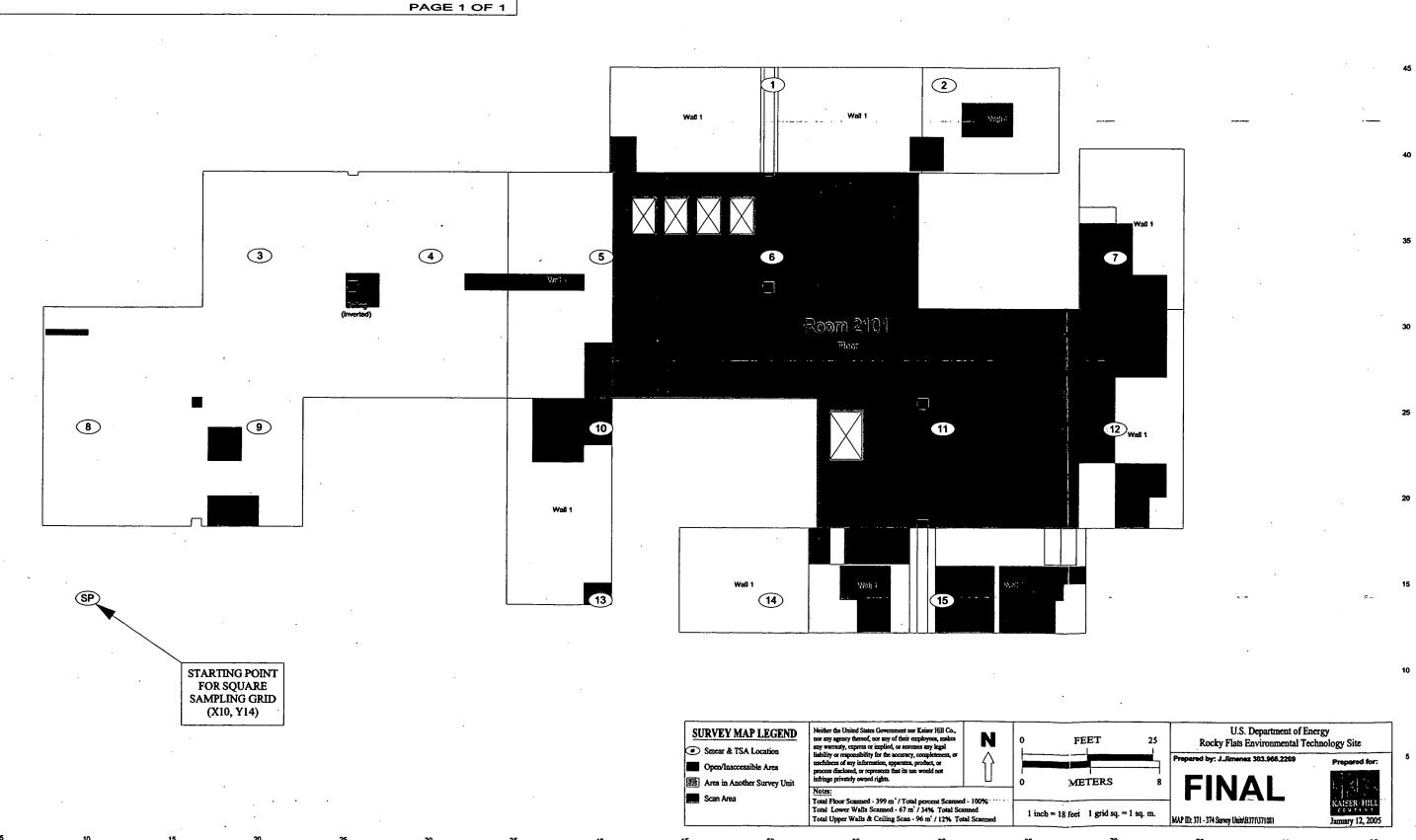
PRE-DEMOLITION SURVEY FOR BUILDING 371

Survey Area: AF Suilding: 371 Room: 2101 Survey Unit: 371081

Classification: 2

Survey Unit Description: Floors, Walls, & Ceiling
Total Area: 1392 sq. m. Total Floor Area: 399 sq. m.

Grid Spacing for Survey Unit Points: 10m. X 10m.



PRE-DEMOLITION SURVEY FOR BUILDING 371 Survey Area: AF Survey Unit: 37-Building: 371 Room: 2101
Survey Unit Description: Walls & Ceiling
Total Area: 1392 sq. m. Survey Unit: 371081 Classification: 2 Total Ceiling Area: 399 sq. m. Grid Spacing for Survey Unit Points: 10m. X 10m. PAGE 1 OF 1  $\langle 1 \rangle$  $\langle \widehat{\mathbf{3}} \rangle$ 4 Room 2101 8 9 (11) Wall 1 13 Wall 1 Wall 1 14 STARTING POINT FOR SQUARE SAMPLING GRID (X10, Y14) Neither the United States Government on Kaiser Hill Co., nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, appearants, product, or process dischooled, or represents that its use would not infinge privately owned rights. U.S. Department of Energy Rocky Flats Environmental Technology Site SURVEY MAP LEGEND FEET METERS Area Not Painted 1 inch = 18 feet 1 grid sq. = 1 sq. m. MAP ID: 371 - 374 Survey Units/B371/371081-Media

# **ATTACHMENT T**

Survey Unit 371087

Radiological Data Summary and Survey Map

Survey Unit: 371087 **Building: 371** Survey Area: AF

Description: Bldg, 371 Decon Area Rm. 2335, 2335A, 2335B, 2335C, and 2337

#### **Rocky Flats Environmental Technology Site Final Radiological Survey Summary Results**

#### **Total Surface Activity Measurements**

Nbr Random Measurements Required: 18

Nbr Biased Measurements Required: 0

Nbr QC Required: 2

Nbr Random Measurements Performed: 18

Nbr Biased Measurements Performed: 0

Nbr QC Performed: 2

Alpha

Maximum:

25.9 dpm/100cm<sup>2</sup>

Minimum:

-17.1 dpm/100cm<sup>2</sup>

Mean:

5.6 dpm/100cm<sup>2</sup>

Standard Deviation:

9.9

QC Maximum:

8.7 dpm/100cm<sup>2</sup>

QC Minimum:

-0.2 dpm/100cm<sup>2</sup>

QC Mean:

4.3 dpm/100cm<sup>2</sup>

Transuranic DCGLw:

100.0 dpm/100cm<sup>2</sup>

Transuranic DCGLEMC:

300.0 dpm/100cm<sup>2</sup>

#### **Removable Surface Activity Measurements**

Nbr Random Measurements Required: 18

Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 18

Nbr Biased Measurements Performed: 0

#### Alpha

Maximum:

5.8 dpm/100cm<sup>2</sup>

Minimum:

-0.9 dpm/100cm<sup>2</sup>

Mean:

1,2 dpm/100cm<sup>2</sup>

Standard Deviation:

2.0

Transuranic DCGLw:

20.0 dpm/100cm<sup>2</sup>

#### Media Sample Results

Nbr Random Required: 0

Nbr Biased Required: 0

Nbr Random Collected: 0

Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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escription: Bldg, 371 Decon Area Rm. 2335, 2335A, 2335B, 2335C, and 2337

#### **Instrument Data Sheet**

Inst/RCT	RCT	Analysis	Instr	Instru	Probe	Calibration	Instru Ef	ficiency	A-Prio (dpm/1		Survey
Number	ID .	Date	Model	S/N	Туре	Due Dt	Alpha	Beta	Alpha	Beta	Туре
1 7	702355	02/22/05	Electra	761	DP-6	05/01/05	0.219	NA	48.0	NA	Т
2 -	702381	02/22/05	Electra	768	AP-6	04/19/05	0.204	NA	300.0	NA	s
3	702381	02/22/05	SAC-4	1072	NA	04/11/05	0.330	NA	10.0	NA	R
4 6	600323	02/22/05	SAC-4	858	NA	04/27/05	0.330	NA	10.0	NA	R
5 6	600323	02/22/05	SAC-4	1497	NA	06/09/05	0.330	NA	10.0	NA	R
6 6	600323	02/22/05	SAC-4	985	NA	05/15/05	0.330	NA	10.0	NA	R
7 6	600323	02/22/05	SAC-4	1407	NA	06/08/05	0.330	NA	10.0	NA	R
8 7	702381	02/22/05	Electra	1593	DP-6	04/04/05	0.223	NA .	48.0	NA	Q
9 6	600373	02/22/05	Electra	244	AP-6	03/23/05	0.171	NA	300.0	NA	S

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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escription: Bldg, 371 Decon Area Rm. 2335, 2335A, 2335B, 2335C, and 2337

#### **Comments Sheet**

General N/A

Comments:

TSA 90-second count time is required. All locations are denoted on survey package survey map.

Comments:

RSA 2-minute count time required. All locations are denoted on survey package map.

Comments:

Media Media samples are not required for this survey unit.

Comments:

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nscription: Bldg, 371 Decon Area Rm. 2335, 2335A, 2335B, 2335C, and 2337

### **Random Removable Surface Activity Data Sheet**

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371087PRP-N001	3	-0.3	N/A	N/A
371087PRP-N002	4	2.7	N/A	N/A
371087PRP-N003	5	2.4	. N/A	N/A
371087PRP-N004	3	2.7	N/A	N/A
371087PRP-N005	6	2.7	N/A	N/A
371087PRP-N006	7	-0.9	N/A	N/A
371087PRP-N007	3	5.8	N/A	N/A
371087PRP-N008	3	-0.3	N/A	N/A
371087PRP-N009	4	2.7	N/A	N/A
371087PRP-N010	5	-0.6	N/A	N/A
371087PRP-N011	6	-0.3	N/A	N/A
371087PRP-N012	7	-0.9	N/A	N/A ,
371087PRP-N013	3	2.7	N/A	N/A
371087PRP-N014	4	2.7	N/A	N/A
371087PRP-N015	5	-0.6	N/A	N/A
371087PRP-N016	6	-0.3	· N/A	N/A
371087PRP-N017	6	2.7	N/A	N/A
371087PRP-N018	7	-0.9	N/A	N/A

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Page: 4 of 5

Pescription: Bldg, 371 Decon Area Rm. 2335, 2335A, 2335B, 2335C, and 2337

# Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
371087PRP-N001	1	10.3	N/A	N/A
371087PRP-N002	1	1.2	N/A	N/A
371087PRP-N003	1	5.8	N/A	N/A
371087PRP-N004	1	10.3	N/A	N/A
371087QRP-N004	8	8.7	N/A	· N/A
371087PRP-N005	1	16.7	N/A	N/A
371087PRP-N006	1	1.2	N/A	N/A
371087PRP-N007	1	-17.1	N/A	N/A
371087PRP-N008	1	-7.9	N/A	N/A
371087PRP-N009	1	10.3	N/A	N/A
371087PRP-N010	1	13.5	N/A	N/A
371087PRP-N011	1	7.6	N/A	N/A
371087PRP-N012	1	1.2	N/A	N/A
371087PRP-N013	1	-1.5	N/A	N/A
371087PRP-N014	1	-1.5	N/A	N/A
371087QRP-N014	8	-0.2	N/A	N/A
371087PRP-N015	1	25.9	N/A	N/A
371087PRP-N016	1	1.2	N/A	N/A
371087PRP-N017	1	16.7	· N/A	N/A
371087PRP-N018	1	7.6	N/A	. N/A

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#### **PRE-DEMOLITION SURVEY FOR BUILDING 371**

Survey Area: Phase II Survey Unit: 371087 Classification: 2

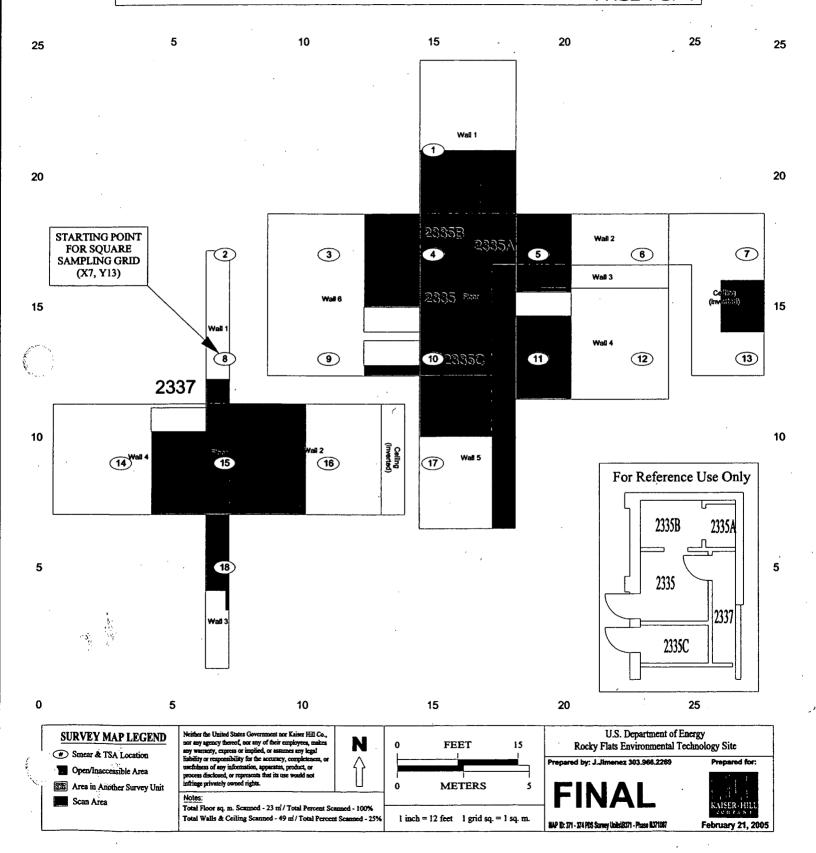
Building: 371 Rooms: 2335, 2335A, 2335B, 2335C & 2337

Survey Unit Description: Floors, Walls & Ceiling

Total Area: 223 sq. m. Total Floor Area: 23 sq. m.

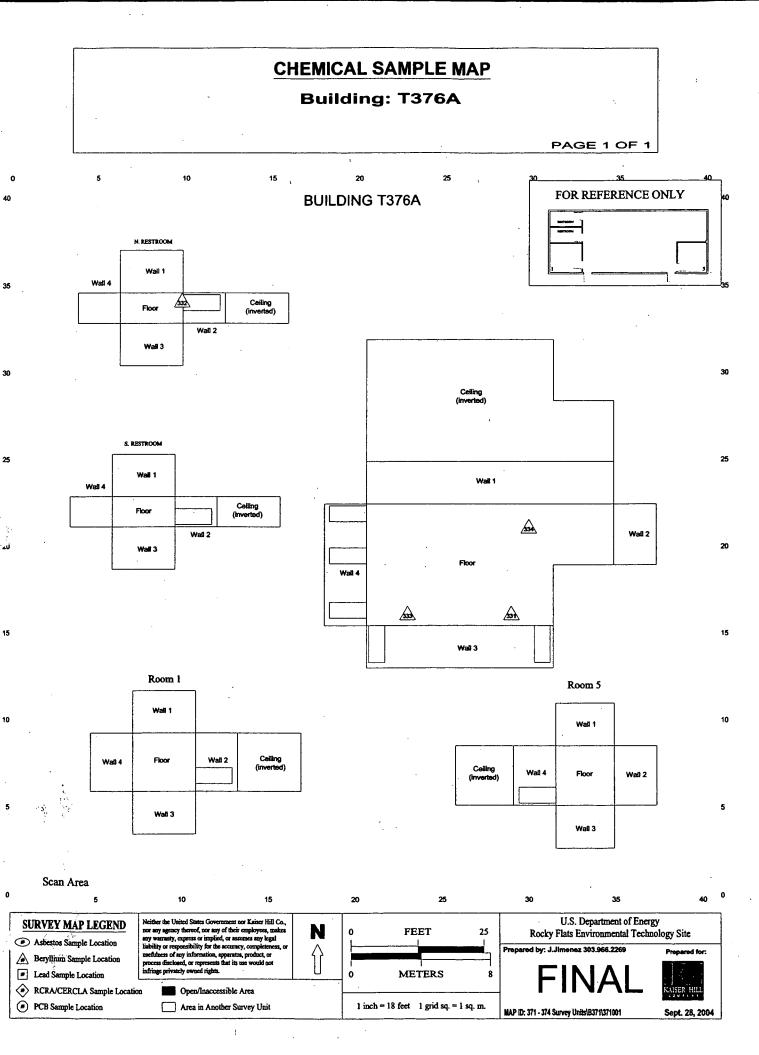
Grid Spacing for Survey Points: 4m. X 4m.

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# ATTACHMENT U

Chemical Data Summaries and Sample Maps



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FINAL SURVEY UNIT 371-001

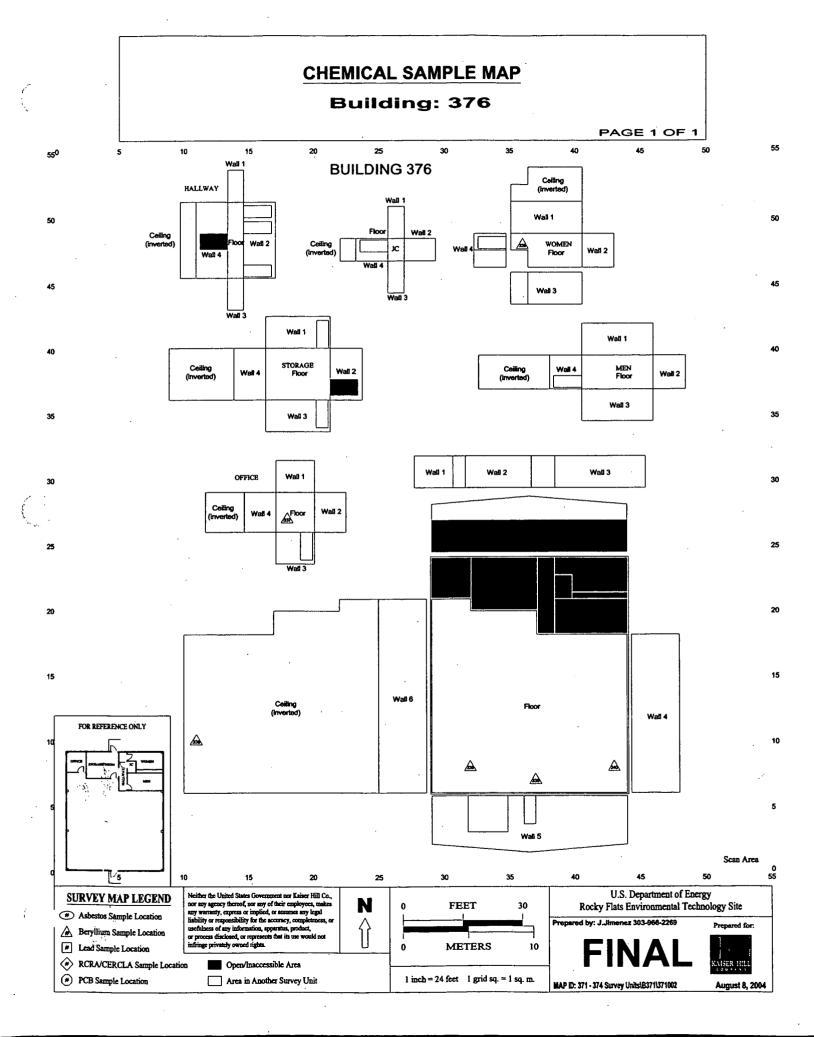
Sample Number	v	Work Pkg	Воот	Location	Туре	Rin No	Analyte	Concentration
KH MCCAFFERTY, RUTH								
376TA-02212005-84-331			INSIDE	FINAL BLDG BE SWIPE-TOP OF	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
376TA-02212005-84-332			INSIDE	CABINE! FINAL BLDG BE SWIPE	WIPE	0500581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
376TA-02212005-84-333			INSIDE	FINAL BLDG BE SWIPE	WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2
376TA-02212005-84-334			INSIDE	FINAL BLDG BE SWIPE	. WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2
H. H.	Building Subtotal: 4 Hygienist Subtotal: 4	otal: 4 ntal: 4						
S	Company Subtotal: 4 Grand Total 4	tal: 4 tal 4	٠					

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FINAL SURVEY UNIT 371-002

Sample Number	Work Pkg	Room	Location	Туре	;	Rin No	Analyte	Concentration
HX								
MCCAFFERTY, RUTH	_		22					
376-02212005-84-335		INSIDE	FINAL BLDG BE SWIPE	WIPE		05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2
376-02212005-84-338	18	INSIDE	FINAL BLDG BE SWIPE	WIPE		05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
376-02212005-84-337		INSIDE	FINAL BLDG BE SWIPE	WIPE	\$1000	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
376-02212005-84-338		INSIDE	FINAL BLDG BE SWIPE	WIPE		05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2
376-02212005-84-339		INSIDE	FINAL BLDG BE SWIPE-TOP OF	WIPE		05D0581	BEÄYLLIUM AND B	< 0.1000 _ UG/100CM2
376-02212005-84-340		INSIDE	FINAL BLDG BE SWIPE	WIPE		05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
1	Building Subtotal: 6 Hyglenist Subtotal: 6					*		
U	Company Subtotal: 6							
	Grand Total 6	,	6					·

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#### **CHEMICAL SAMPLE MAP Building: T371K** PAGE 1 OF 1 25 30 35 **BUILDING T371K** Wall 1 Room 3 Wall 1 Wall 4 Wall 2 Room 1 Wat 2 Floor Room 2 Wall 4 Wall 2 Ceiling (inverted) Wall 1 Room 4 Wall 1 Room 5 Wall 2 Wall 4 Restroom Ceiting Wall 4 Floor Wall 2 Wall 3 Ceiling (Inverted) Wall 1 Walt 3 Room 8 Wall 4 Ceiling (inverted) Ceiling (inverted) Room 6 Room 7 Wati 4 Wall 2 Wall 3 Wall 3 Wall 3 Ceiling (inverted) FOR REFERENCE USE ONLY Wall 1 Hallway Floor $\Delta$ Wall 2 Wall 3 Ceiling (inverted) 10 20 25 Neither the United States Government nor Kaiser Hill Co., nor any agency thereof, nor any of their employees, makes U.S. Department of Energy **SURVEY MAP LEGEND** N FEET 25 Rocky Flats Environmental Technology Site nor any agency the crost, nor any of these emptoyees, ma any warranty, express or implicit, or assumes any legal liability or responsibility for the accuracy, completeness usefulness of my information, appearants, product, or process disclosed, or represents that its use would not infringe privately owned rights. Asbestos Sample Location Beryllium Sample Location # Lead Sample Location **METERS** RCRA/CERCLA Sample Location Open/Inaccessible Area PCB Sample Location 1 inch = 18 feet 1 grid sq. = 1 sq. m. Area in Another Survey Unit Sept. 28, 2004 MAP ID: 371 - 374 Survey Units\B371\371003

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FINAL SURVEY UNIT 371-003

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Analyte Rin No Type Location Room Work Pkg MCCAFFERTY, RUTH Sample Number

BERYLLIUM AND B < 0.1000\_UG/100CM2

0500581 05D0581 05D0581

WIPE WIPE WIPE

FINAL BLDG BE SWIPE FINAL BLDG BE SWIPE

INSIDE INSIDE INSIDE

T371K-02192005-84-328 T371K-02192005-84-329 T371K-02192005-84-330

FINAL BLDG BE SWIPE-TOP OF SHELF UNIT

Hygienist Subtotal: 3

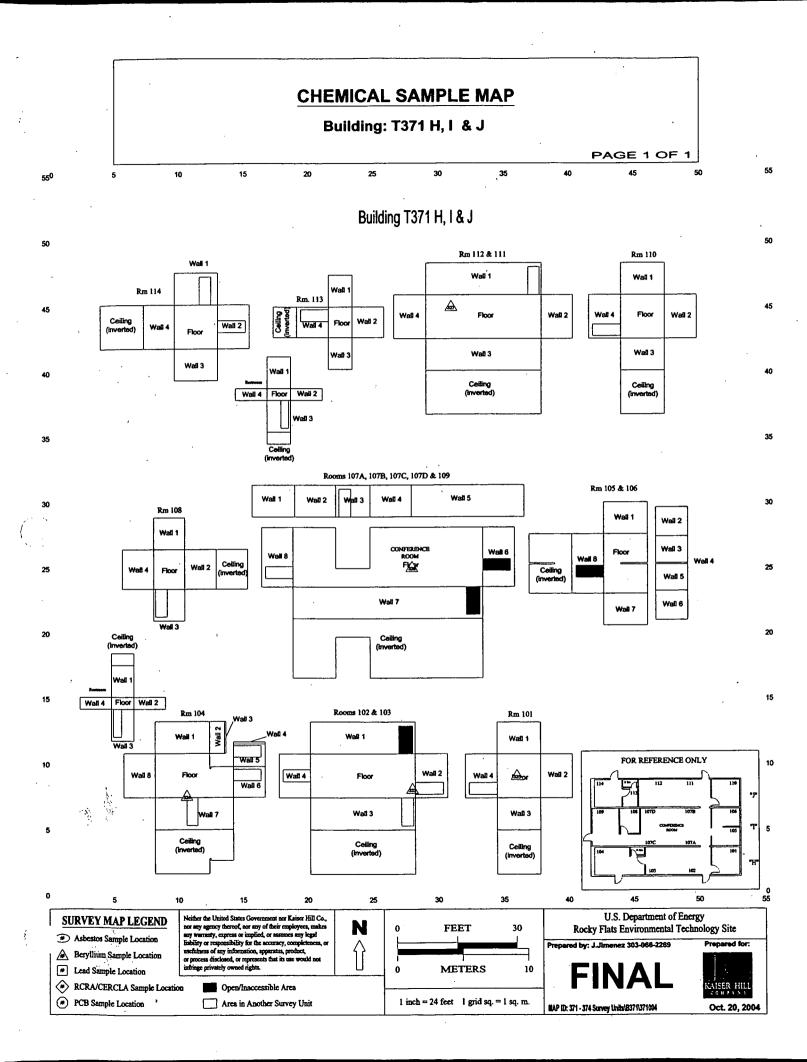
Building Subtotal: 3

Grand Total 3 Company Subtotal: 3

< 0.1000 \_ UG/100CM2 < 0.1000 \_ UG/100CM2

BERYLLIUM AND B BERYLLIUM AND B DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION

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Date: 02/24/2005

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Sample Number	Work Pkg	Room	Location	Туре	Bin No	Analyte	Concentration
<i>КН</i> МССАFFERTY, RUTH		-		5			
371TH-02192005-84-323	٠	INSIDE	FINAL BLDG BE SWIPE	WIPE	0500581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
371TH-02192005-84-324		INSIDE	FINAL BLDG BE SWIPE	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000_UG/100CM2
371TH-02192005-84-325		INSIDE	FINAL BLDG BE SWIPE	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
Building Subtotal, 3	ubtotal; 3					×	

Hygienist Subtotal: 3 Company Subtotal: 3 Grand Total 3 DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION

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Date: 02/24/2005

Analyte Rin No Type Location Room Work Pkg Sample Number

Н

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T3711-02192005-84-326

BERYLLIUM AND B < 0.1000\_UG/100CM2

05D0581

WIPE

FINAL BE SWIPES-TOP OF STORAGE RACK

INSIDE

Building Subtotal: 1

Hygienist Subtotal: 1

Company Subtotal: 1

Grand Total 1

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FINAL SURVEY UNIT 371-004

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Date: 02/24/2005

Concentration Analyte Rin No 700 Location Room Work Pkg Sample Number

Bullding Subtotal: 1

MCCAFFERTY, RUTH T371J-02192005-84-327

BERYLLIUM AND B < 0.1000 \_ UG/100CM2

0500581

WIPE

FINAL BLDG BE SWIPE-TOP OF SHELF

INSIDE

Hyglenist Subtotal: 1

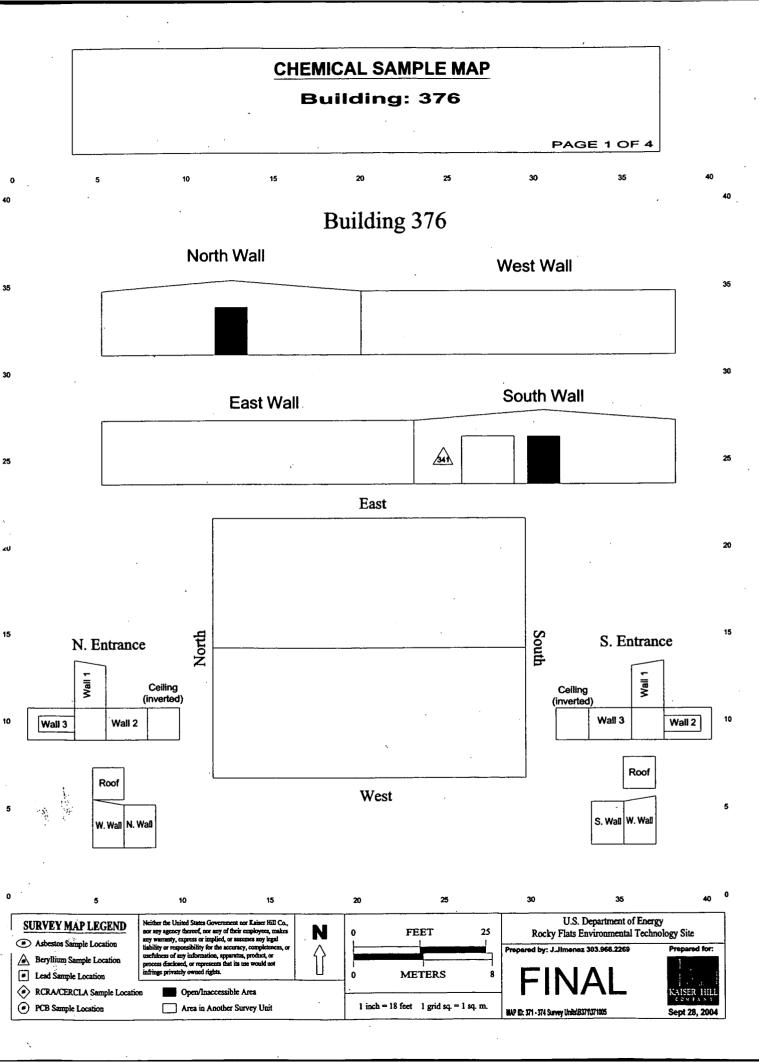
Company Subtotal: 1

Grand Total 1

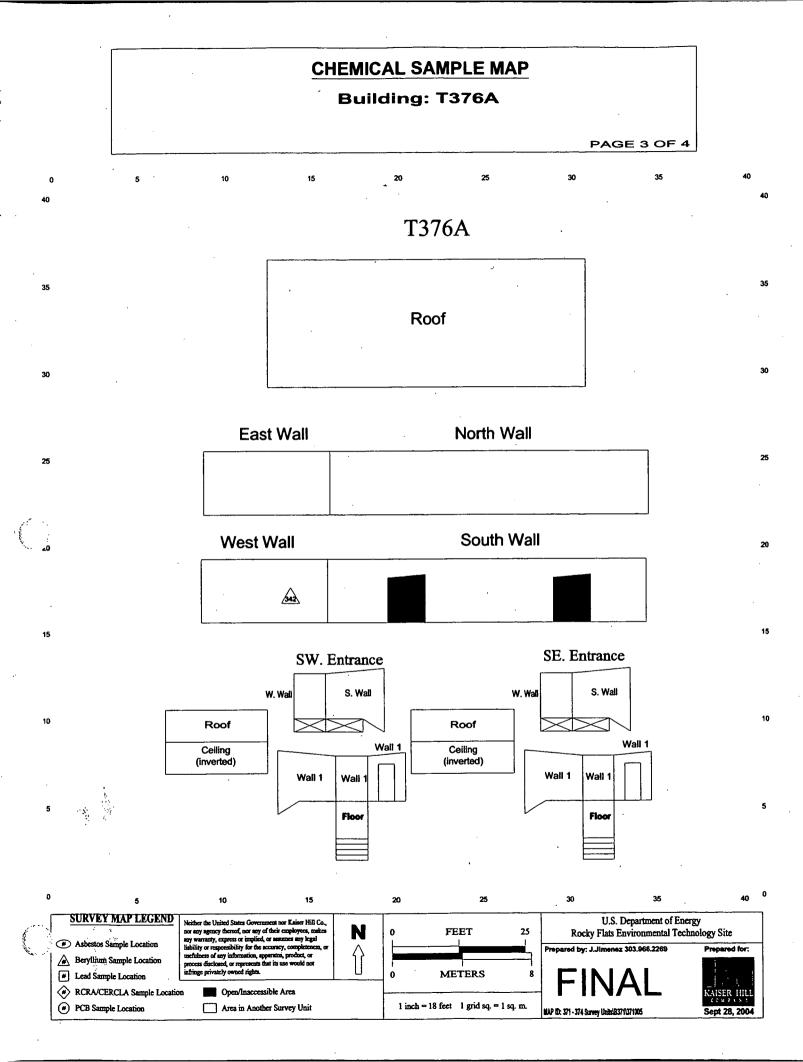
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#### **CHEMICAL SAMPLE MAP Building: T371K** PAGE 2 OF 4 35 T371K Exterior West Wall South Wall **East Wall** North Wall North W. Entrance E. Entrance 343 Roof Roof South N. Wall W. Wall N. Entrance Wall 1 Wall 1 Roof Wall 3 Wall 2 Wall 2 Wall 3 Wall 3 Wall 2 Ceiling (inverted) Ceiling Ceiling (inverted) (inverted) 20 25 U.S. Department of Energy **SURVEY MAP LEGEND** N FEET 25 Rocky Flats Environmental Technology Site Asbestos Sample Location Beryllium Sample Location ₩ Lead Sample Location **METERS** RCRA/CERCLA Sample Location Open/Inaccessible Area 1 inch = 18 feet 1 grid sq. = 1 sq. m. PCB Sample Location Area in Another Survey Unit MAP ID: 371 - 374 Survey Units B371\371005



#### **CHEMICAL SAMPLE MAP** Building:T371 H, I & J PAGE 4 OF 4 T371H, I & J Exterior T371I T371I T371J N. Wali (Looking South) S. Wall (Looking North) Roof T371I T371H S. Wall (Looking North) N. Wall (Looking South) East Wall North Wall 35 West Wall South Wall ◬ SW. Entrance SE. Entrance W. Entrance NE. Entrance NW. Entrance Wall 2 Wall 2 Wall 3 Wall 3 Wall 2 Wall 3 Wall 3 Roof 45 35 25 U.S. Department of Energy Neither the United States Government nor Kaiser Hill Co., nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy. completeness: or SURVEY MAP LEGEND FEET 30 Rocky Flats Environmental Technology Site ty or responsibility for the accuracy, compness of any information, apparatus, aradi Asbestos Sample Location ▲ Beryllium Sample Location or process disclosed, or represent infringe privately owned rights. **METERS** 10 Lead Sample Location RCRA/CERCLA Sample Location Open/Inaccessible Area Area in Another Survey Unit 1 inch = 24 feet 1 grid sq. = 1 sq. m. PCB Sample Location MAP ID: 371 - 374 Survey Units/B371/371005

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FINAL SURVEY UNIT 371-005

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

Concentration		< 0.1000 _ UG/100CM2	BERYLLIUM AND B < 0.1000 UG/100CM2	
Analyte		05D0581 BERYLLIUM AND B < 0.1000_UG/100CM2	BERYLLIUM AND B	
Rin No		05D0581	05D0581	
Туре		WIPE	WIPE	
Location	1	FINAL BLDG BE SWIPE-SOUTH WALL	FINAL BLDG BE SWIPE-6' FROM GROUND	
Room	÷	OUTSIDE	OUTSIDE	
Work Pkg				Building Subtotal; 2
Sample Number	<i>KH</i> MCCAFFERTY, RUTH	376-02212005-84-341	376-02212005-84-342	Bulldi

Hyglenist Subtotal: 2 Company Subtotal: 2 Grand Total 2 DOES NOT CONTAIN
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FINAL SURVEY UNIT 371-005

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Date: 02/24/2005

Concentration	·	BERYLLIUM AND B < 0.1000 _ UG/100CM2	BERYLLIUM AND B < 0.1000 _ UG/100CM2	40		
Analyte	·	BERYLLIUM AND B	BERYLLIUM AND B			
Rin No	æ	05D0581	. 05D0581			•
Туре		WIPE	WIPE			
Location		FINAL BE SWIPE-3' FROM EAST EDGE S'HIGH	FINAL BE SWIPE-W WALL OF STOOP 3'FROM S EDGE 5'H		9.8	S.
Коот	e ~	OUTSIDE	OUTSIDE			
Work Pkg				Building Subtotal: 2 Hyglenist Subtotal: 2	Company Subtotal: 2	Grand Total 2
Sample Number	<i>KH</i> МССАFFERTY, RUTH	371TH-02212005-84-344	371TH-02212005-84-345	Bulb Hygier	Сотра	•

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FINAL SURVEY UNIT 371-005

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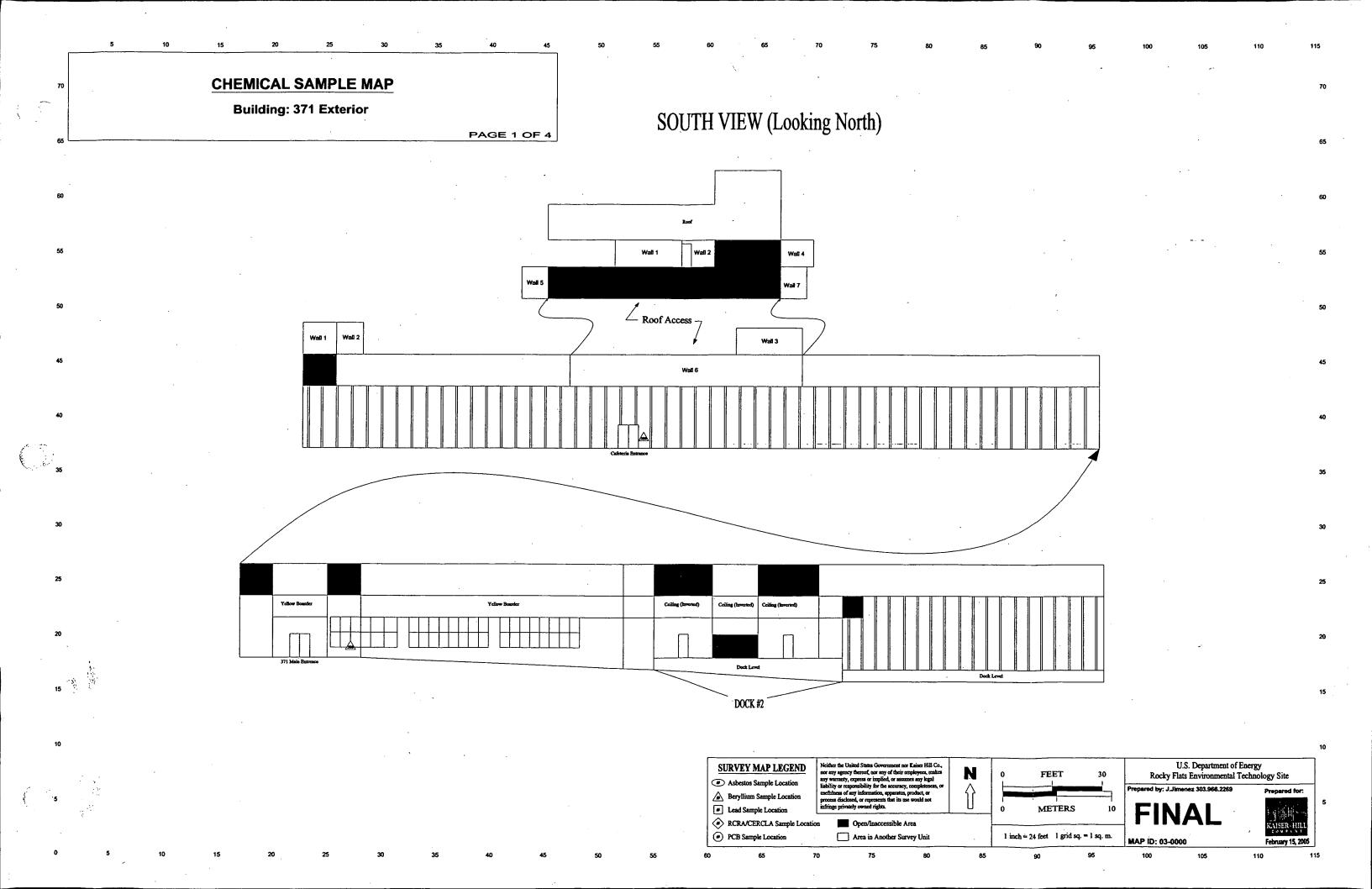
Date: 02/24/2005

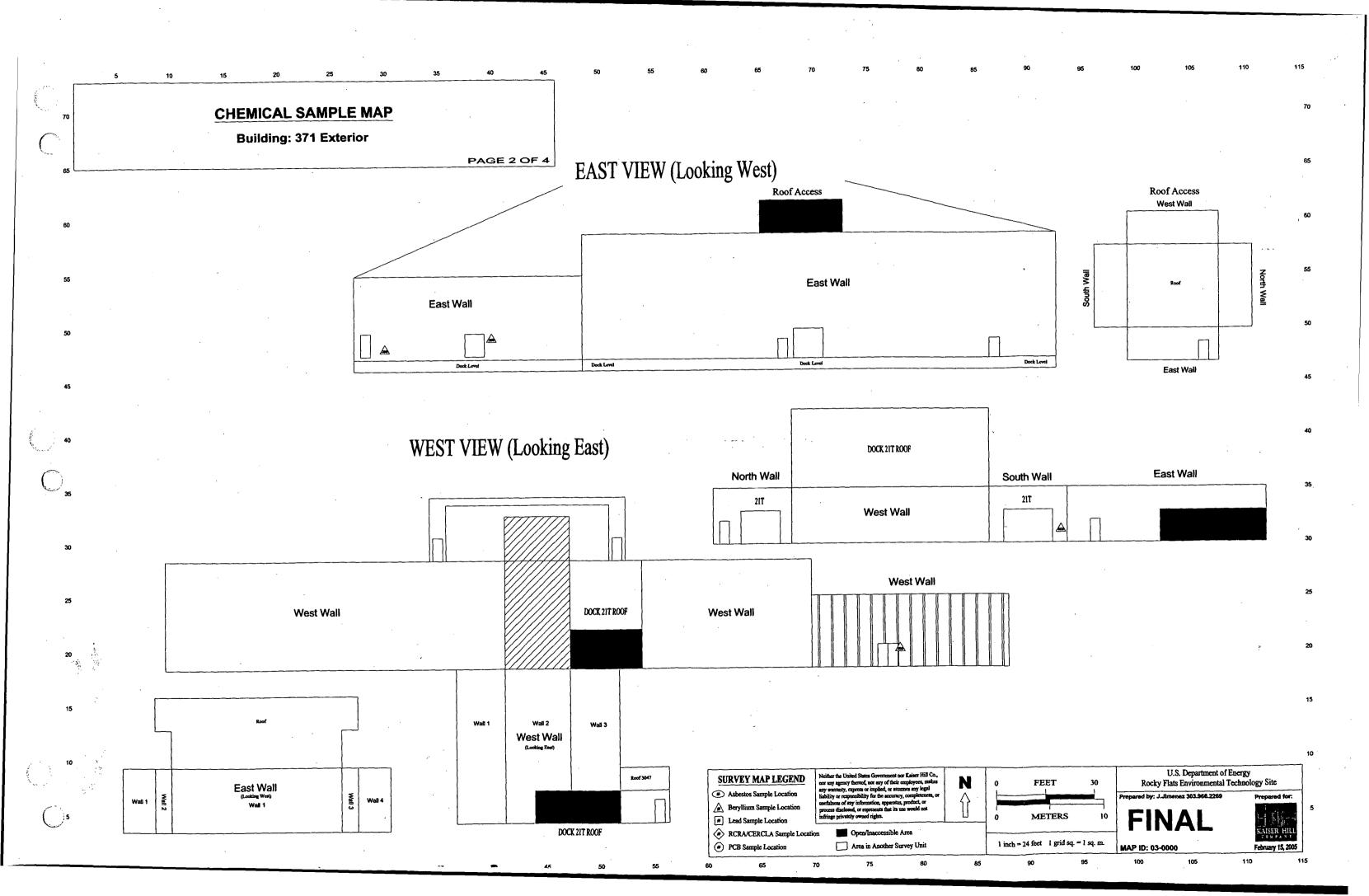
 Sample Number	Work Pkg	Room		Location	Туре	Rin No	Analyte	Concentration
 <i>KH</i> MCCAFFERTY, RUTH		,		,	•			f
 T371K-02212005-84-343		OUTSIDE	FINAL BLDG EAST WALL	FINAL BLDG BE SWIPE-SOUTH EAST WALL	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2

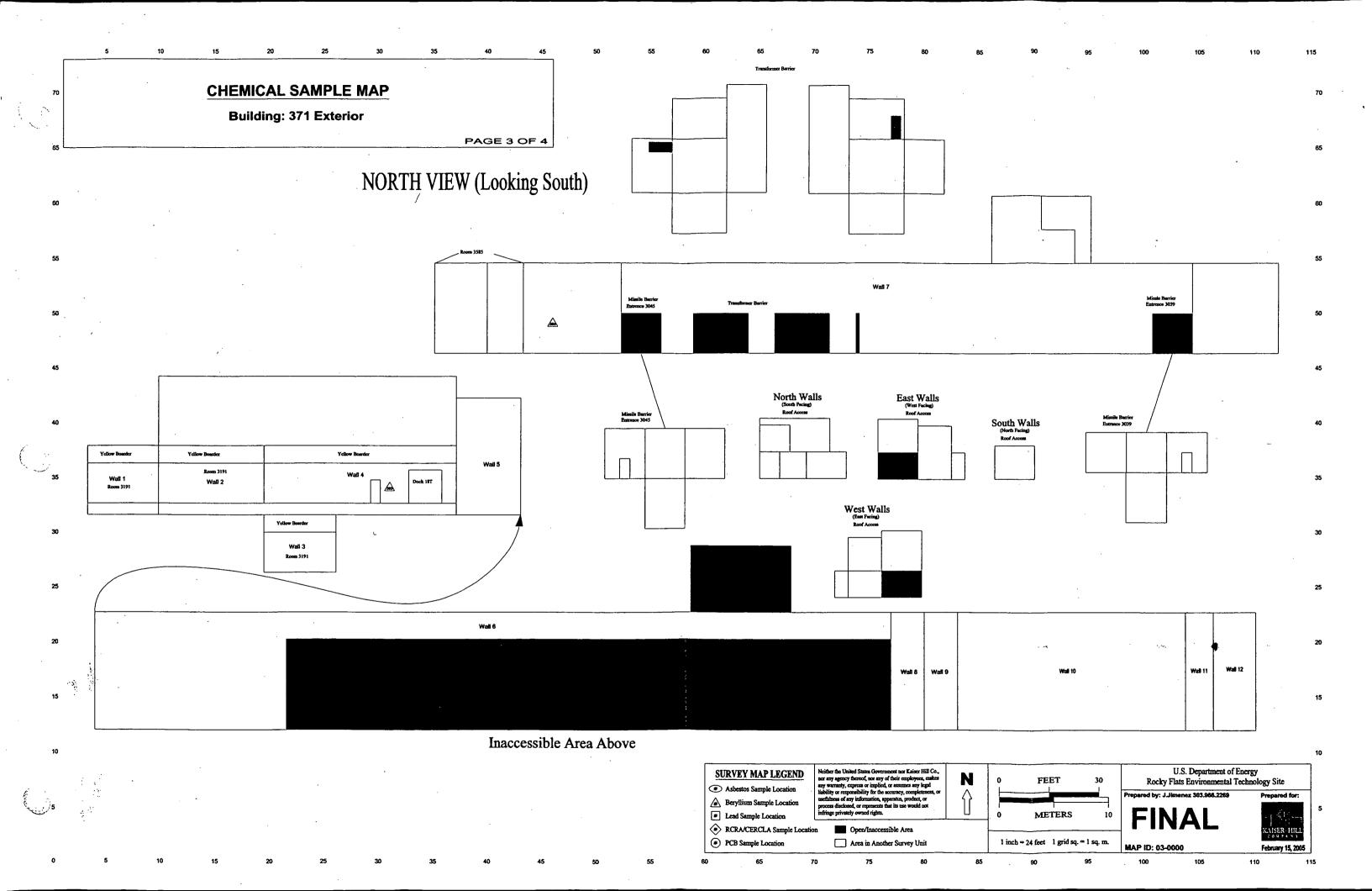
Building Subtotal: 1 Hygienist Subtotal: 1 Company Subtotal: 1 Grand Total 1 the second for fourty may be

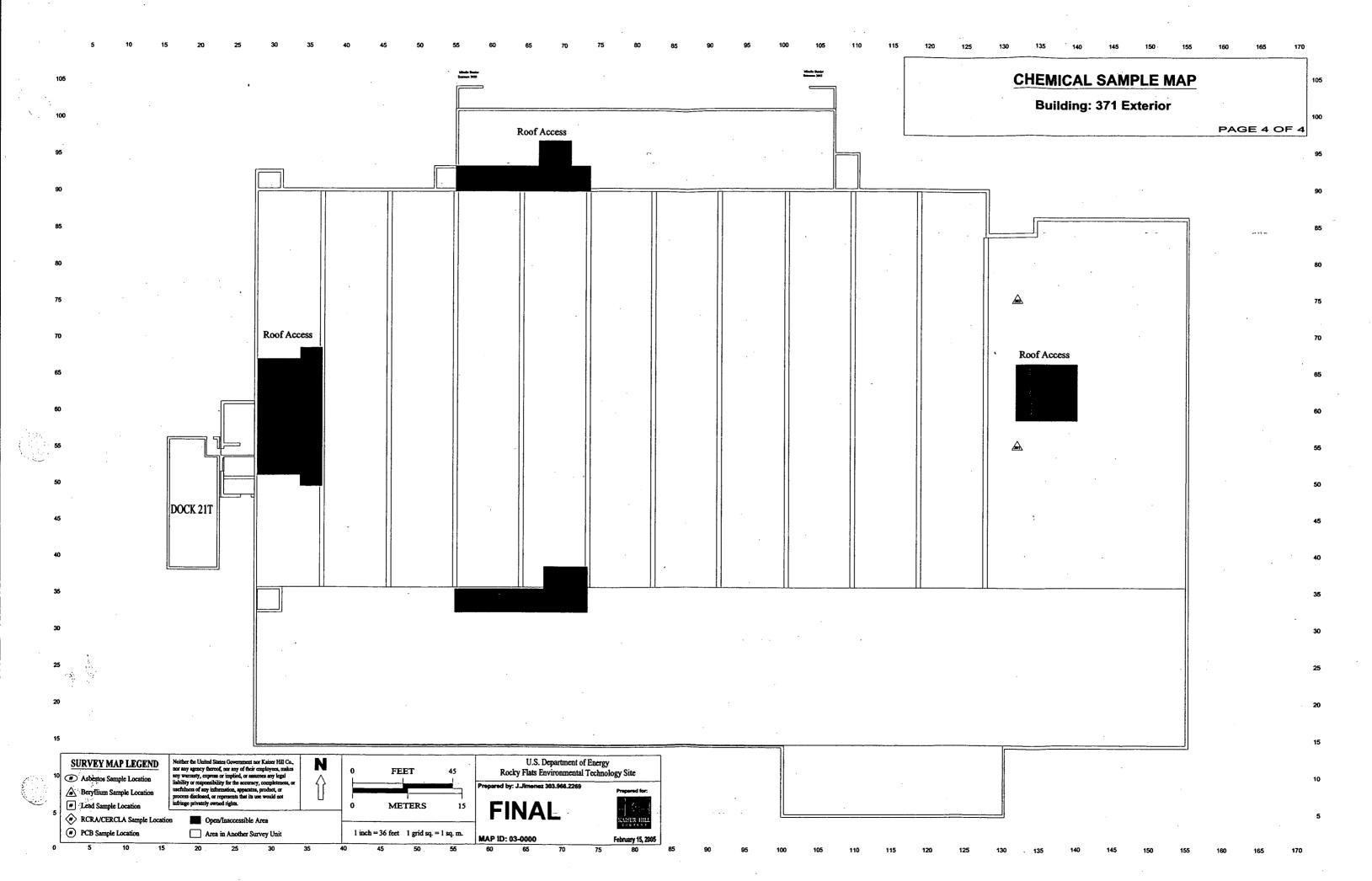
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IHISR\_SAMPLE\_RESULTS\_REPORT Date: 02/24/2005

FINAL SURVEY UNIT 371-008

# Industrial Hygiene Information System Sample Results Report

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BERYLLIUM AND B < 0.1000\_UG/100CM2 < 0.1000 \_ UG/100CM2 BERYLLIUM AND B < 0.1000\_UG/100CM2 Concentration BERYLLIUM AND B Analyte 05D0581 05D0581 05D0581 0500581 0500581 0500581 05D0581 05D0581 0500581 05D0581 Rin No WIPE WIPE WIPE WIPE WIPE WIPE 7,00 WIPE WIPE WIPE WIPE FINAL BE SWIPE-E WALL 4' NORTH OF 4D 5'H FINAL BE SWIPES-N WALL AT 18T FINAL BE SWIPE-E WALL DOCK-5 FINAL BE SWIPE-S WALL 12' E OF MAIN ENTR 5'H FINAL BE SWIPES-ROOF-NORTH EXHAUST VENT FINAL BE SWIPE-W WALL 2' N OF DOOR 22 5'H FINAL BE SWIPES-ROOF-SOUTH EXHAUST VENT FINAL BE SWIPE-W WALL AT 21T TRK LDOUT FACE S 4'H FINAL BE SWIPE-S WALL 4' E OF DOOR 23 5'H FINAL BE SWIPE-N WALL AT DOOR19 S'H/6' W OF DOOR Location 6'N OF 5D 5'H Room OUTSIDE Work Pkg Building Subtotal: 10 MCCAFFERTY, RUTH Sample Number 371-02212005-84-396 371-02212005-84-397 371-02212005-84-398 371-02212005-84-391 371-02212005-84-392 371-02212005-84-393 371-02212005-84-394 371-02212005-84-395 371-02212005-84-399 371-02212005-84-400

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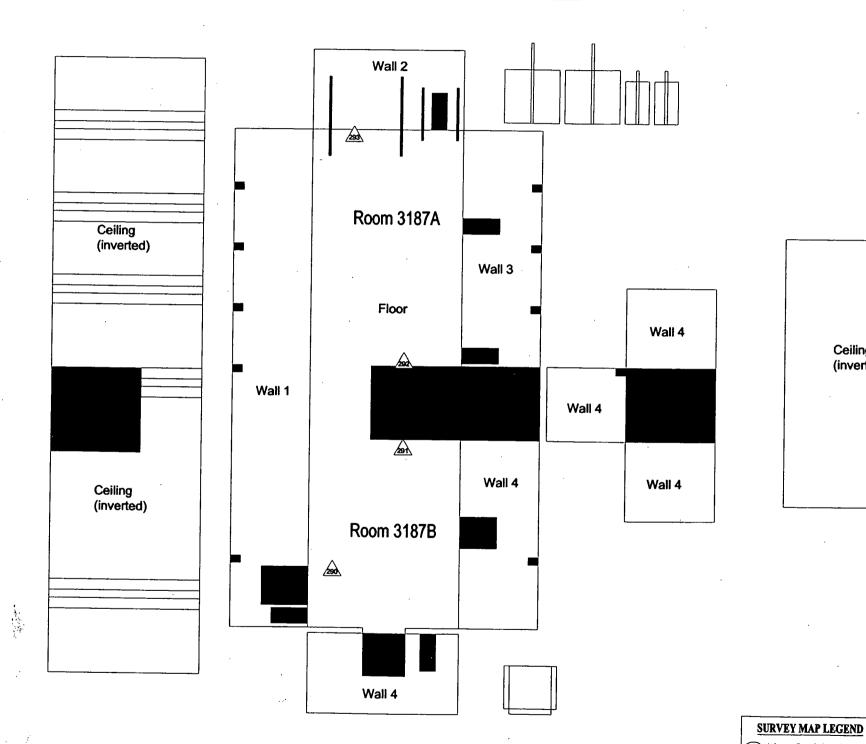
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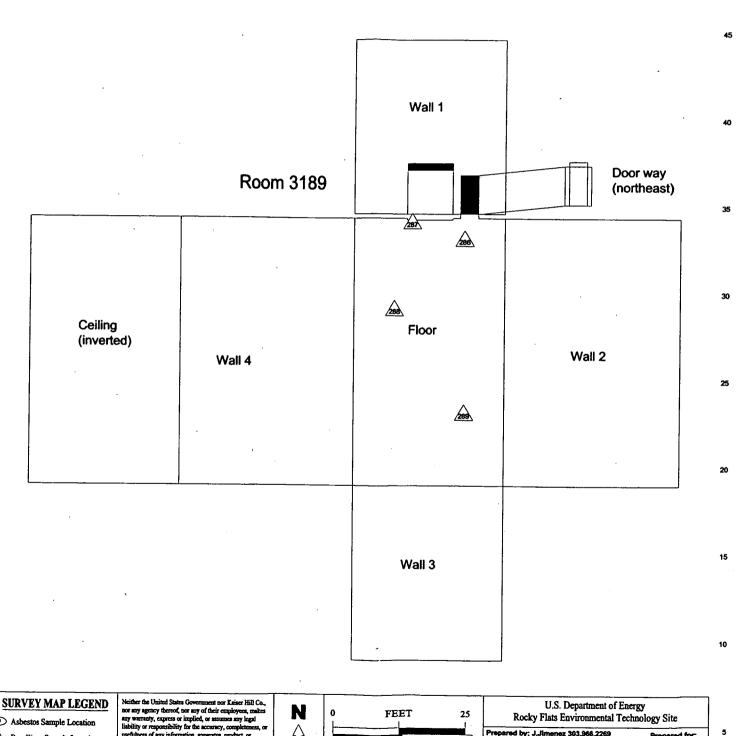
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Company Subtotal: 10 Grand Total 10

Hygienist Subtotal: 10

CHEMICAL SAMPLE MAP Building: 371 Rooms: 3187A ,B & 3189 PAGE 1 OF 1





FEET

METERS

1 inch = 18 feet 1 grid sq. = 1 sq. m.

▲ Beryllium Sample Location Lead Sample Location

PCB Sample Location

RCRA/CERCLA Sample Location

Area in Another Survey Unit

U.S. Department of Energy Rocky Flats Environmental Technology Site

IHISR\_SAMPLE\_RESULTS\_REPORT Date: 02/24/2005

# Industrial Hygiene Information System Sample Results Report

SURFACE

Page:

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FINAL SURVEY UNIT 371-023

Sample Number . Work Pkg	Room	Location	Туре	Rin No	Analyte	Concentration	
<i>КН</i> МССАFFERTY, RUTH			E A		·		
371-02192005-84-292	3187-A	FINAL BUILDING BE SWIPES	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2	
371-02192005-84-293	3187-A	FINAL BUILDING BE SWIPES	WIPE	0500581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2	
Building Subtotal: 2			٠				
Hyglenist Subtotal: 2		91					
Company Subtotal: 2		e e					
Grand Total 2							

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Concentration

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1 of 1

Page:

SUR Sample Number Work Pkg Room Location

MCCAFFERTY, RUTH
371-02182005-84-280
371-02182005-84-281

BERYLLIUM AND B < 0.1000\_UG/100CM2
BERYLLIUM AND B < 0.1000\_UG/100CM2

05D0581

WIPE

FINAL BUILDING BE SWIPES

3187B

FINAL BUILDING BE SWIPES-LIP OF WIPE EXHAUST DUCT

Hyglenist Subtotal: 2 Company Subtotal: 2

Building Subtotal: 2

Grand Total 2

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IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

1 of 1

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BERYLLIUM AND B < 0.1000\_UG/100CM2 BERYLLIUM AND B < 0.1000\_ UG/100CM2 < 0.1000 \_ UG/100CM2 BERYLLIUM AND B < 0.1000 \_ UG/100CM2 Concentration BERYLLIUM AND B Analyte 05D0581 05D0581 05D0581 05D0581 Rin No Type WIPE WIPE WIPE WIPE SURFACE FINAL BUILDING BE SWIPES FINAL BUILDING BE SWIPES FINAL BUILDING BE SWIPES FINAL BUILDING BE SWIPES Location Room 3189 3189 3189 3189 Work Pkg Building Subtotal: 4 Company Subtotal: 4 Grand Total 4 Hygienist Subtotal: 4 FINAL SURVEY UNIT 371-023 MCCAFFERTY, RUTH Sample Number 371-02192005-84-286 371-02192005-84-288 371-02192005-84-287 371-02192005-84-289

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**Building: 371 Room: 18T** 

PAGE 1 OF 1

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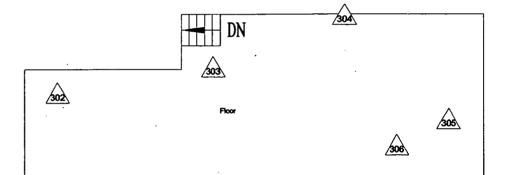
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**SURVEY MAP LEGEND** 

Asbestos Sample Location

Beryllium Sample Location

**■ Lead Sample Location**

RCRA/CERCLA Sample Location

PCB Sample Location

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Open/Inaccessible Area

Area in Another Survey Unit



0 FEET 15 0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy Rocky Flats Environmental Technology Site

repared by: J. Rmenez 303.966.2269

**FINAL** 

KAISER HILL

MAP ID: 371 - 374 Survey Units\B371\371039

FINAL SURVEY UNIT 371-039

# Industrial Hyglene Information System Sample Results Report

1 of 1

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SURFACE

< 0.1000\_UG/100CM2 BERYLLIUM AND B < 0.1000\_UG/100CM2 < 0.1000 \_ UG/100CM2 < 0.1000\_UG/100CM2 < 0.1000 \_ UG/100CM2 Concentration BERYLLIUM AND B BERYLLIUM AND B BERYLLIUM AND B BERYLLIUM AND B Analyte 05D0581 05D0581 0500581 05D0581 05D0581 Rin No 779 WIPE WIPE WIPE WIPE FINAL BLDG. BE SWIPES-TOP OF HE WIPE TANK STORAGE RACK FINAL BUILDING BE SWIPES FINAL BUILDING BE SWIPES FINAL BUILDING BE SWIPES FINAL BUILDING BE SWIPES Location DOCK-18 DOCK-18 DOCK-18 DOCK-18 DOCK-18 Work Pkg Building Subtotal: 5 Hygierist Subtotal: 5 Company Subtotal: 5 Grand Total 5 MCCAFFERTY, RUTH Sample Number 371-02192005-84-302 371-02192005-84-303 371-02192005-84-305 371-02192005-84-304 371-02192005-84-306

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Leshoim Date OF-05-08 Name/Org

**Building: 3191** 

PAGE 1 OF 1

5 10 15 20 25 25 25 20 20 15 15 Room 3191 309 **200** 10 10 Wall 2 311 308 310 5 Wall 3 0 5 15 20 25 10 U.S. Department of Energy SURVEY MAP LEGEND Neither the United States Government nor Kaiser Hill Co., nor any agency thereof, nor any of their employees, makes N FEET any warranty, express or implied, or liability or responsibility for the accountfulness of any information Rocky Flats Environmental Technology Site ed, or assumes any legal Asbestos Sample Location ▲ Beryllium Sample Location Lead Sample Location **METERS** RCRA/CERCLA Sample Location Open/Inaccessible Area

1 inch = 12 feet 1 grid sq. = 1 sq. m.

MAP ID: 371 - 374 Survey Units\B371\371046

PCB Sample Location

Area in Another Survey Unit

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

FINAL SURVEY UNIT 371-046

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1 of 1

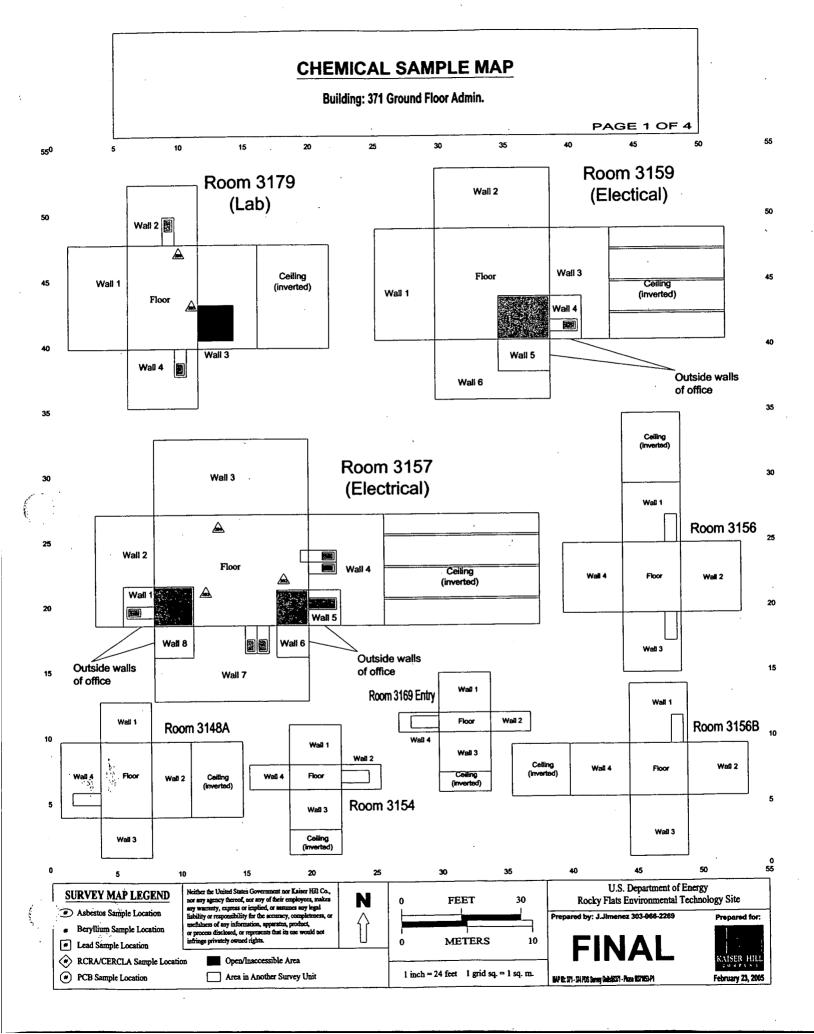
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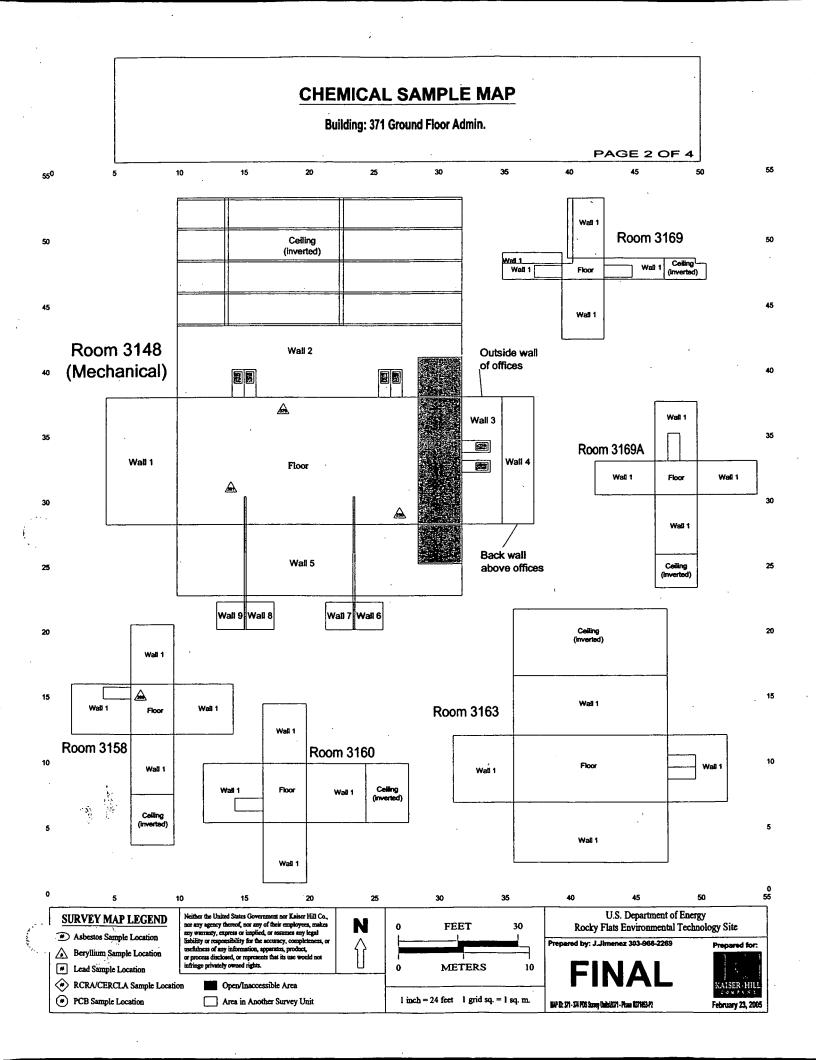
Sample Number	Work Pkg	Room	Location	Туре	Rin No	Analyte	Concentration
				•			
£				a a			
MCCAFFERTY, RUTH	<b>.</b>		(A		٠		
371-02192005-84-307	3191	16	FINAL BLDG. BE SWIPES	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02192005-84-308	3191		FINAL BLDG. BE SWIPES-TOP OF BOILER - EAST END	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000_UG/100CM2
371-02192005-84-309	3191	16	FINAL BE SWIPES-TOP OF HORIZONTAL SUPPORT N-WALL	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02192005-84-310	3191	16	FINAL BE SWIPES-TOP OF NITROGEN PIPING	WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2
371-02192005-84-311	3191		FINAL BE SWIPES-TOP OF CONTROL BOX FOR BOILER	WIPE .	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2
	Building Subtotal; 5						×
_	Hygienist Subtotal; 5						
0	Company Subtotal: 5						
•	Grand Total 5		3				

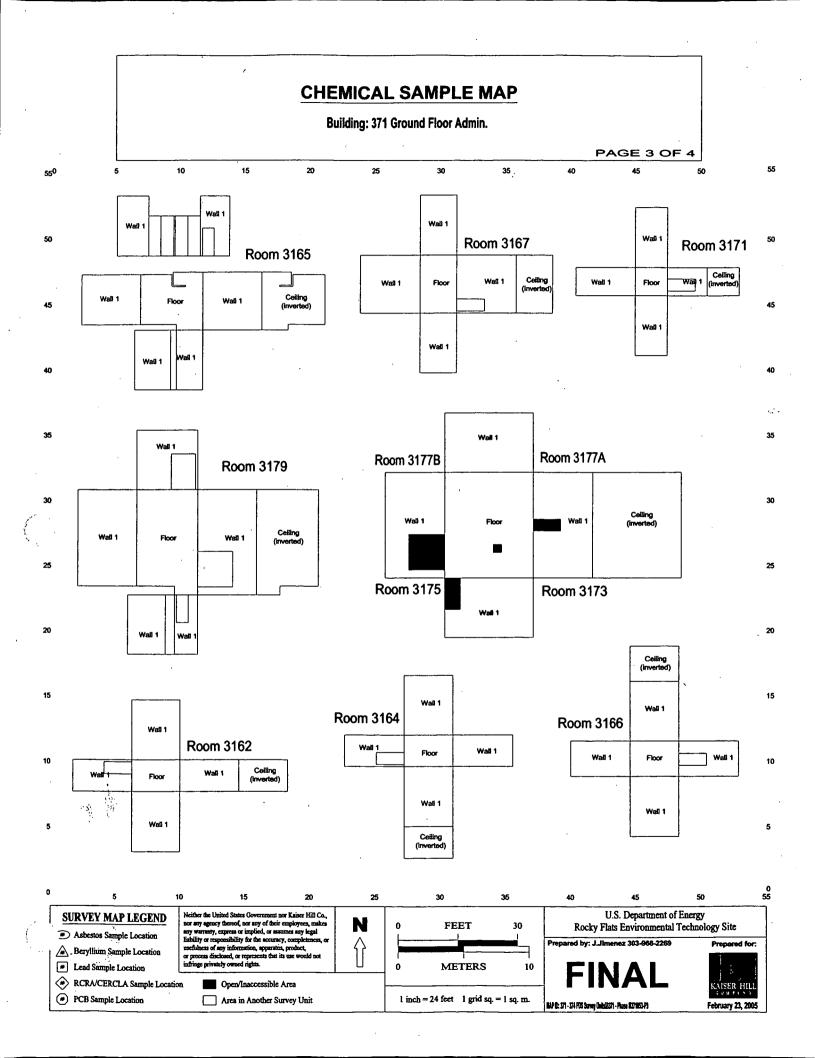
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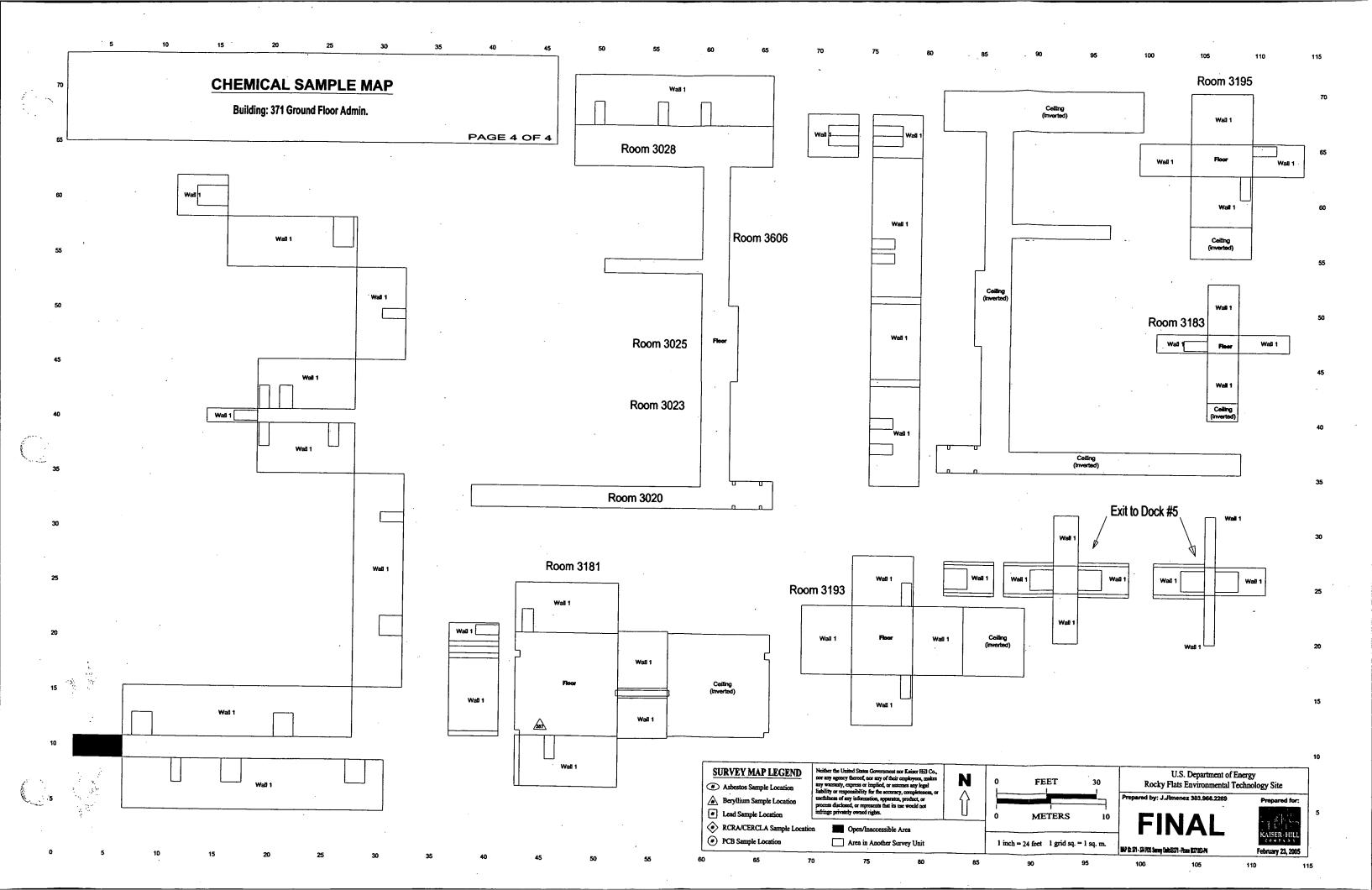
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Concentration

Analyte

Rin No

Type

Location

Room

Work Pkg

Sample Number

1 of 1

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FINAL SURVEY UNIT 371-053

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

KH MCCAFFERTY, RUTH

Building Subtotal: 1

371-02212005-84-381

BERYLLIUM AND B < 0.1000\_UG/100CM2

0500581

WIPE

FINAL BLDG BE SWIPE-MECHANICAL

3148

Hyglenist Subtotal: 1

Company Subtotal: 1

Grand Total

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FINAL SURVEY UNIT 371-053

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

Sample Number	Work Pkg	Room	Location	Туре	Rin No	Analyte	Concentration	
KH MCCAFFERTY, RUTH			,		40		,	
371-02212005-84-382	8	3157	FINAL BLDG BE SWIPE-ELECTRICAL WIPE	L WIPE .	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2	
371-02212005-84-383	. 31	3157	FINAL BLDG BE SWIPE-ELECTRICAL WIPE	L WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2	
371-02212005-84-384		3157	FINAL BLDG BE SWIPE-ELECTRICAL WIPE	L WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2	
Building Subtotal: 3 Hyglenlst Subtotal: 3 Company Subtotal: 3 Grand Total 3	otal: 3 otal: 3 fal: 3				2	T.		

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IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

FINAL SURVEY UNIT 371-053

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Industrial Hygiene Information System

Sample Results Report

1 of 1

Page:

Concentration

BERYLLIUM AND B < 0.1000\_UG/100CM2 Analyte 05D0581 Rin No WIPE Type FINAL BLDG BE SWIPE Location Room 3158 Work Pkg MCCAFFERTY, RUTH Sample Number 371-02212005-84-388

Hyglenist Subtotal: 1 Company Subtotal: 1

Grand Total 1

Building Subtotal: 1

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1 of 1

FINAL SURVEY UNIT 371-053

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

Sample Number	Work Pkg	Room	Location	Туре	Rin No	Analyte	Concentration
KH MCCAFFERTY, RUTH							
371-02212005-84-379		3179	FINAL BLDG BE SWIPE.	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-380		3179	FINAL BLDG BE SWIPE.	WIPE	0500581	BERYLLIUM AND 8	< 0.1000_UG/100CM2
371-02212005-84-385		3179	MECHANICAL FINAL BLDG BE SWIPE-LAB	. WIPE	0500581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
371-02212005-84-386		3179	FINAL BLDG BE SWIPE-LAB	WIPE	0500581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
ı	Building Subtotal: 4 Harianist Subtotal: 4		*				
. ბ	Company Subtotal: 4	¥					
	Grand Total 4						

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Date: 02/24/2005

FINAL SURVEY UNIT 371-053

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BERYLLIUM AND B < 0.1000 \_ UG/100CM2 Concentration Analyte 05D0581 **Rin No** Type WIPE FINAL BLDG BE SWIPE Location Room 3181 Work Pkg MCCAFFERTY, RUTH Sample Number 371-02212005-84-387

Grand Total 1

Building Subtotal: 1 Hygienist Subtotal: 1 Company Subtotal: 1 OFFICIAL USE ONLY

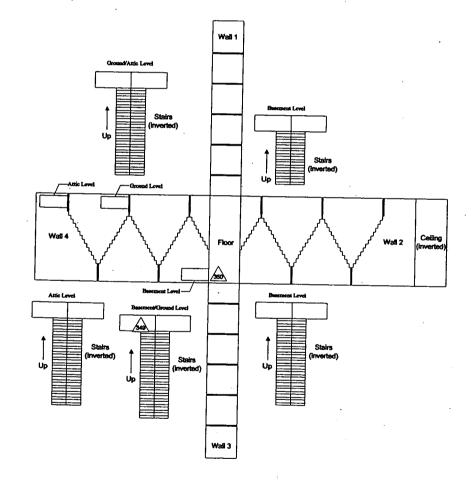
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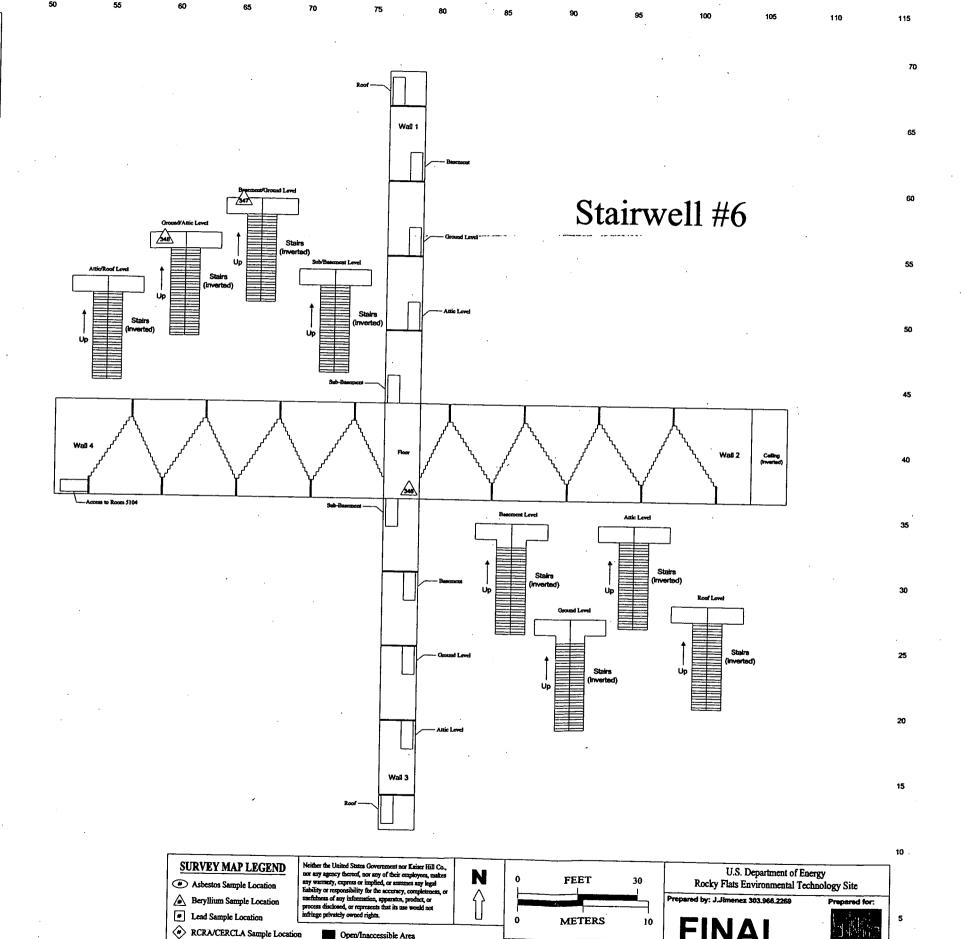
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Building: 371 Stairwells: #6 & #7

PAGE 1 OF 1

# Stairwell #7





PCB Sample Location

Area in Another Survey Unit

FINAL SURVEY UNIT 371-056

# Industrial Hygiene Information System Sample Results Report

SURFACE

1 of 1

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		,						
Sample Number	Work Pkg	Room	Location	Туре	•	Rin No	Analyte	Concentration
EX.								
MCCAFFERTY, RUTH			•					
371-02212005-84-346		STAIRWELLS	FINAL BLDG BE SWIPE-STAIRWELL #6	WIPE		05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-347		STAIRWELLS	FINAL BLDG BE SWIPE-STRWELL 6- LANDING	WIPE		05D0581	BERYLLIUM AND B	BERYLLIUM AND B < < 0.1000 _ UG/100CM2
371-02212005-84-348	el	STAIRWELLS	FINAL BLDG BE SWIPE-STRWELL 6 LDNG AT ATTIC LEVEL	WIPE		0500581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000_UG/100CM2
371-02212005-84-349	âr	STAIRWELLS	FINAL BLDG BE SWIPE-STRWELL 6 WIPE LDNG AT GRND LEVEL	MPE		05D0581	BERYLLIUM AND B.	BERYLLIUM AND B . < 0.1000_UG/100CM2
371-02212005-84-350	ř	STAIRWELLS	FINAL BLDG BE SWIPE-STAIRWELL 7	WIPE		05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
60	Bulkling Subtotal: 5							
Ť	Hygienist Subtotal; 5							
Š	Company Subtotal: 5							
e	Grand Total 5							*

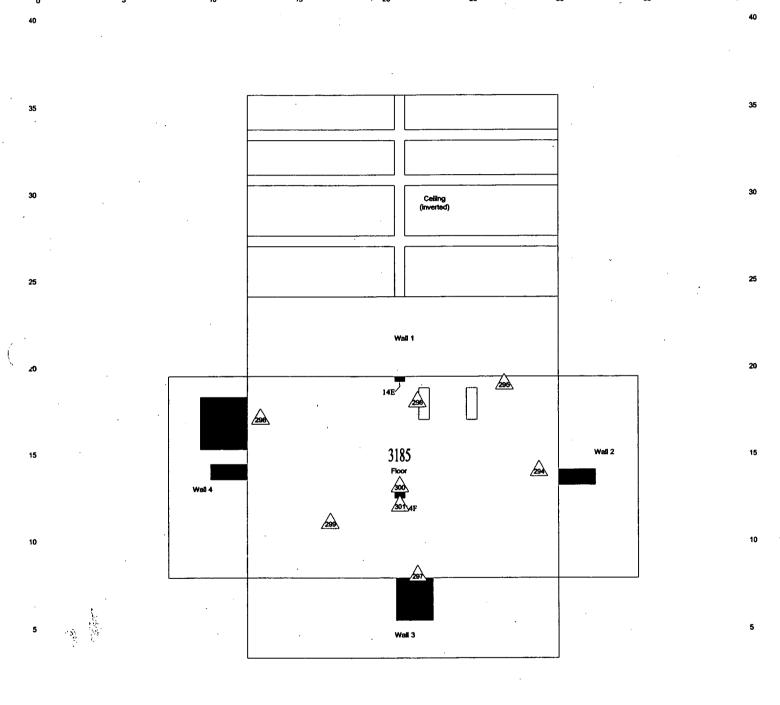
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Building: 371 Room: 3185

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IHISR\_SAMPLE\_RESULTS\_REPORT

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Industrial Hygiene Information System Sample Results Report

FINAL SURVEY UNIT 371-057

Date: 02/24/2005

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Sample Number		Work Pkg	Œ.	Room	7	Location	Туре	Rin No	Analyte	Concentration	
<i>KH</i> MCCAFFERTY, RUTH		8					•				I
371-02192005-84-294		•	3185		FINAL BUILDING BE SWIPES		WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2	
371-02192005-84-295			3185		FINAL BUILDING	FINAL BUILDING BE SWIPES-TOP OF WIPE PI ANT AID BIDING	WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2	
371-02192005-84-298			3185		FINAL BUILDING BE SWIPES	BE SWIPES	WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2	
371-02192005-84-297			3185		FINAL BUILDING BE SWIPES		WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2	
371-02192005-84-298			3185		FINAL BUILDING BE SWIPES		WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2	
371-02182005-84-299			3185		FINAL BUILDING BE SWIPES		WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2	
371-02192005-84-300			3185		FINAL BUILDING BE SWIPES		WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2	
371-02182005-84-301			3185	g.	FINAL BUILDING GAGE ON F14	FINAL BUILDING BE SWIPES-TOP OF WIPE GAGE ON F14	WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2	
	Building Subtotal: 8	ototal: 8			12					,	
T	Hygienist Subtotal: 8	itotal: 8					•				
Q	Company Subtotal: 8	total: 8									
	Grand Total	Total B				3					

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**Building: 371 Room: Elevator Shaft** 

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Ceiling (Inverted) **Elevator Shaft** West Wall South Wall North Wall 4 354 North Wall South Wall <u>353</u> North Wall South Wall <u>352</u> West Wall North Wall East Wall South Wall 351 Floor

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### U.S. Department of Energy SURVEY MAP LEGEND Nemer the United States Lovernmens for Master HILL Come say agency thereof, nor say of their employees, make say warranty, express or implied, or assumes say legal liability or responsibility for the soccursor, completeness seekhoess of say information, apparatus, product, or process disclosed, or represents that it use would not infringe privately owned rights. FEET 25 Rocky Flats Environmental Technology Site Asbestos Sample Location A Beryllium Sample Location Lead Sample Location **METERS** RCRA/CERCLA Sample Location Open/Inaccessible Area PCB Sample Location 1 inch = 18 feet 1 grid sq. = 1 sq. m. Area in Another Survey Unit MAP ID: 371 - 374 Survey Units/8371/371058

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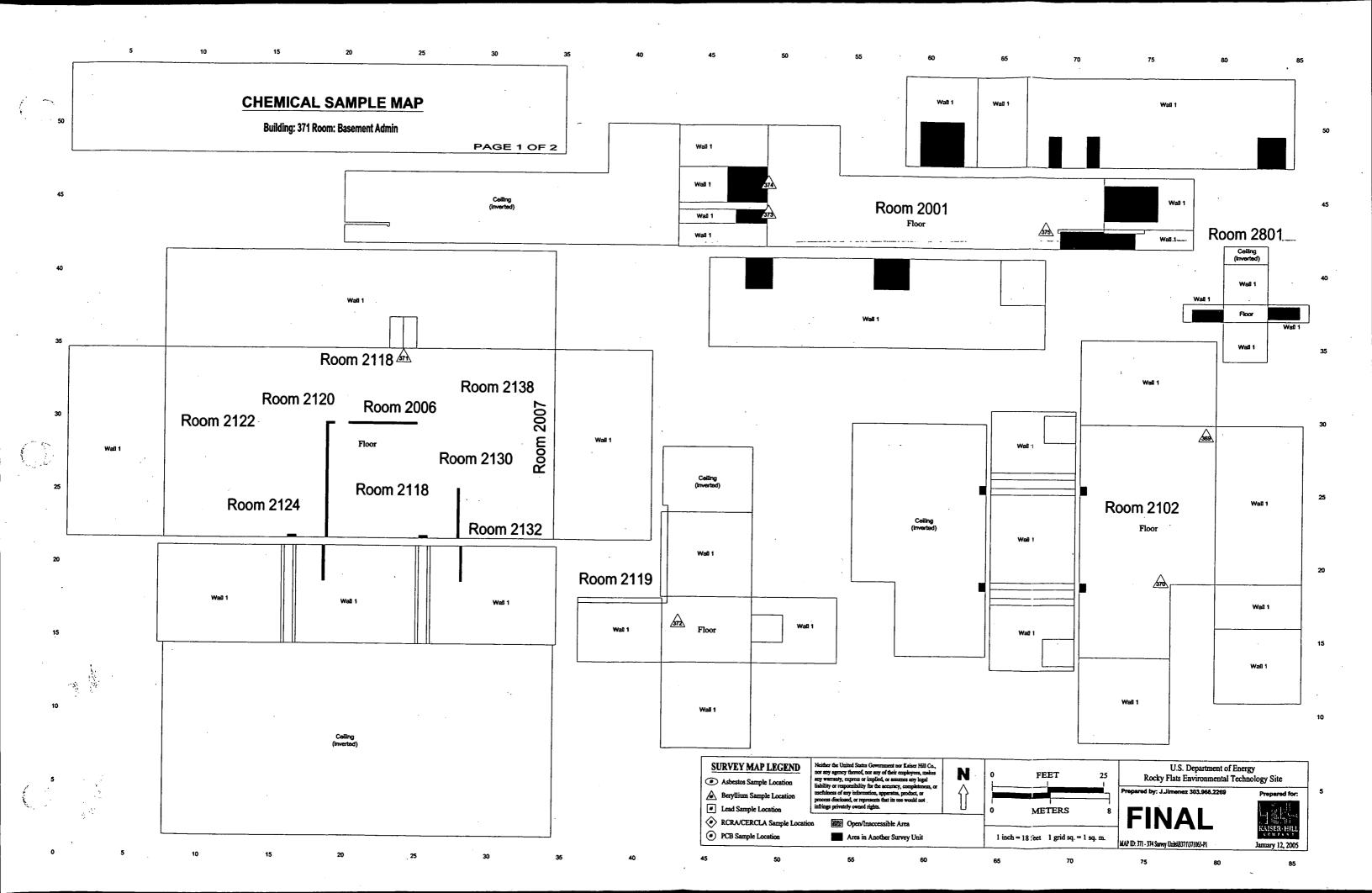
FINAL SURVEY UNIT 371-058

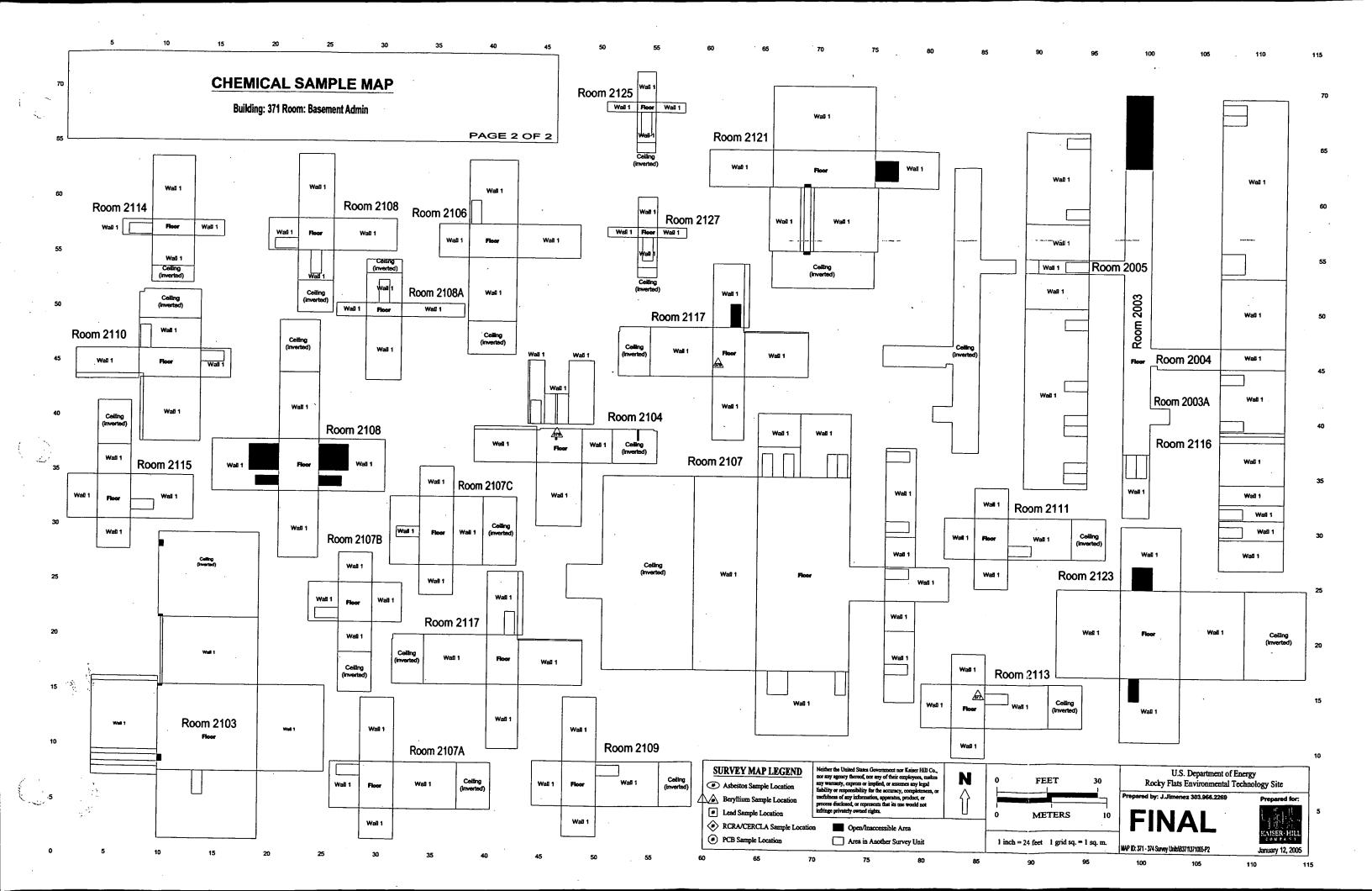
IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

Sample Number	Work Pkg	Воот	Location	Туре	Rin No	Analyte	Concentration
КН		æ?					
мссаггевту, вотн	1.8%					Q Q	
371-02212005-84-351	0	ELEVATOR	FINAL BE SWIPE-NORTH WALL CENTER 5' S-BASEMENT	WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2
. 371-02212005-84-352		ELEVATOR	FINAL BE SWIPE-NORTH WALL, EAST SIDE 5'H BASEMENT	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-353		ELEVATOR	FINAL BE SWIPE-SOUTH WALL, CENTER, S'H GRND FLOOR	WIPE	05D0581	BERYLLIUM AND B	< 0.1000UG/100CM2
371-02212005-84-354		ELEVATOR	FINAL BE SWIPE-SOUTH WALL, CENTER, 5'H ATTIC LEVEL	WIPE .	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-355	: :	ELEVATOR	FINAL BE SWIPE-TOP OF BEAM ON TOP OF ELEV CENTER	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000_UG/100CM2
Building 5	Building Subtotal: 5						
Hygienist S	Hygienist Subtotal; 5						

Company Subtotal: 5 Grand Total 5 DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION





IHISH\_SAMPLE\_RESULTS\_REPORT Date: 02/24/2005

# Industrial Hygiene Information System Sample Results Report

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1 of 1

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FINAL SURVEY UNIT 371-085

Sample Number	Work Pkg	Воол	Location	Type	Rin No	Analyte	Concentration
КН	•		<b>t</b> s				
MCCAFFERTY, RUTH							SV
371-02212005-84-373		2001	FINAL BLDG BE SWIPE	WIPE	05D0581	BERYLLIUM AND B	< 0.1000_ UG/100CM2
371-02212005-84-374		2001	FINAL BLDG BE SWIPE	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
371-02212005-84-375		2001	FINAL BLDG BE SWIPE	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
Bulldin	Building Subtotal: 3		*			×	
Hyglenis	Hyglenist Subtotal: 3						
Company	Company Subtotal: 3						÷
45	Grand Total 3			2		R	

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FINAL SURVEY UNIT 371-065

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

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Sample Number	Work Pkg	Воош	Location	Туре		Rin No	Analyte	Concentration
<i>КН</i> МССАFFERTY, RUTH	_					÷		,
				•	2			
371-02212005-84-369		2102	FINAL BLDG BE SWIPE-IN FRONT OF WIPE	JF WIPE		05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
371-02212005-84-370		2102	FINAL BLDG BE SWIPE-IN FRONT OF WIPE EXHAUST VENT	JF WIPE		05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
	Building Subtotal: 2							
	Hyglenist Subtotal: 2							
	Company Subtotal: 2					1.e		
	Grand Total 2							

SURFACE

1 of 1

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FINAL SURVEY UNIT 371-065

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

Sample Number	Work Pkg	Коош	Location	Туре	Rin No	Analyte	Concentration
МССАFFERTY, RUTH							
371-02212005-84-378	8	2104	FINAL BLDG BE SWIPE	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
Building Subtotal: 1 Hygienist Subtotal: 1	ubtotal: 1 btotal: 1			2		*	
Company Subtotal:	btotal: 1						
Grand Lotal	total I						

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IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

FINAL SURVEY UNIT 371-065

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Page:

BERYLLIUM AND B < 0.1000 LUG/100CM2

05D0581

WIPE

FINAL BLDG BE SWIPE-AT DOORWAY

2116

MCCAFFERTY, RUTH

371-02212005-84-371

Building Subtotal: 1 Hygienist Subtotal: 1

Grand Total 1 Company Subtotal: 1

Concentration

Analyte

Rin No

Type

Location

Room

Work Pkg

Sample Number

SURFACE

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N. S.

SURFACE

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FINAL SURVEY UNIT 371-065

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

Concentration Analyte Rin No Type Location Room Work Pkg MCCAFFERTY, RUTH Sample Number

BERYLLIUM AND B < 0.1000\_UG/100CM2

05D0581

WIPE

FINAL BLDG BE SWIPE

2117

371-02212005-84-376

Hygienist Subtotal: 1

Building Subtotal: 1

Company Subtotal: 1

Grand Total 1

CHICIAL USE ONLY

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bers(s) 2. Approval by the Department of Energy prior to Contains Information writen may be exer

Building: 371 Rooms: 4101, 4102, 4103, 4104, 4105 & 4106

PAGE 1 OF 1 25 A (4103) STR#6 (4101) 4102 4106 ◬ (4104) STR#7 STR#26 UP UP 25 30 Neither the United States Government nor Kaiser Hill Co., nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, appearatus, product, or process disclosed, or represents that its use would not U.S. Department of Energy SURVEY MAP LEGEND **FEET** 30 Rocky Flats Environmental Technology Site Asbestos Sample Location Prepared for: ▲ Beryllium Sample Location **METERS** 

1 inch = 24 feet 1 grid sq. = 1 sq. m.

 ■ Lead Sample Location RCRA/CERCLA Sample Location

Area to be removed as LLW

Open/Inaccessible Area

Area in Another Survey Unit

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/28/2005

FINAL BE SURVEY UNIT 371-066

SURFACE

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Concentration		CT COCK CT COCK CT	< 0.1000   Jie/100CM2	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CMZ	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000_ UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000_UG/100CM2	< 0.1000 _ UG/100CM2	< 0.1000 _ UG/100CM2	ONTAIN	1m Day 788-U8	Passin Price
Analyte		20000	BERYILLIM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	BERYLLIUM AND B	DOES NOT CONTAIN OFFICIAL USE ONLY INFORMATION	aget Naherm	EMC 3'C Classin
Rin No		0570024	0570934	0520934	0520934	0520934	0520934	05Z0934	0520934	0520934	0520934	0520934	0520934	0520934	0520934	0520934	0520934	0520934		Spa No.	Ŵ
Туре		9	A PI	WIPE	Wipe	WIPE	WIPE	WIPE	WIPE	WIPE	WIPE	WIPE	WIPE	WIPE	WIPE	WIPE	WIPE	WIPE		,	OFFICIAL USE ONLY
Location		FINAL RE SAMPLES SUBVEY LINIT	371-068 FINAL BE SAMPLES-SURVEY UNIT	371-086 FINAL BE SAMPLES-SURVEY UNIT	571-068 FINAL BE SAMPLES-SURVEY UNIT 371-086	FINAL BE SAMPLES-SURVEY UNIT 371-088	FINAL BE SAMPLES-SURVEY UNIT 371-086	FINAL BE SAMPLES-SURVEY UNIT 371-086	FINAL BE SAMPLES-SURVEY UNIT 371-086	FINAL BE SAMPLES-SURVEY UNIT 371-068	FINAL BE SAMPLES-SURVEY UNIT 371-056 RM 4108	FINAL BE SAMPLES-SURVEY UNIT 371-068	FINAL BE SAMPLES-SURVEY UNIT	FINAL BE SAMPLES-SURVEY UNIT	FINAL BE SAMPLES-SURVEY UNIT 371-988	FINAL BE SAMPLES-SURVEY UNIT 371-068	FINAL BE SAMPLES-SURVEY UNIT 371-066	FINAL BE SAMPLES-SURVEY UNIT 371-066			OFFICIALT
Яоош	ins o	. 4101	4101	4104	4101	4104	4101	4101	4104	4101	4106	4101	4102	4101	4101	4101	4101	4102			
Work Pkg											37 12							×			
Sample Number	KH MCCAECEDTY BITTU	371-02102005-84-261	371-02102005-84-262	371-02102005-84-263	371-02102005-84-264	371-02102005-84-265	371-02102005-84-266	371-02102005-84-267	371-02102005-84-268	371-02102005-84-269	371-02102005-84-270	371-02102005-84-271	371-02102005-84-272	371-02102005-84-273	371-02102005-84-274	371-02102005-84-275	371-02102005-84-276	371-02102005-84-277		21	•

IHISR\_SAMPLE\_RESULTS\_REPORT

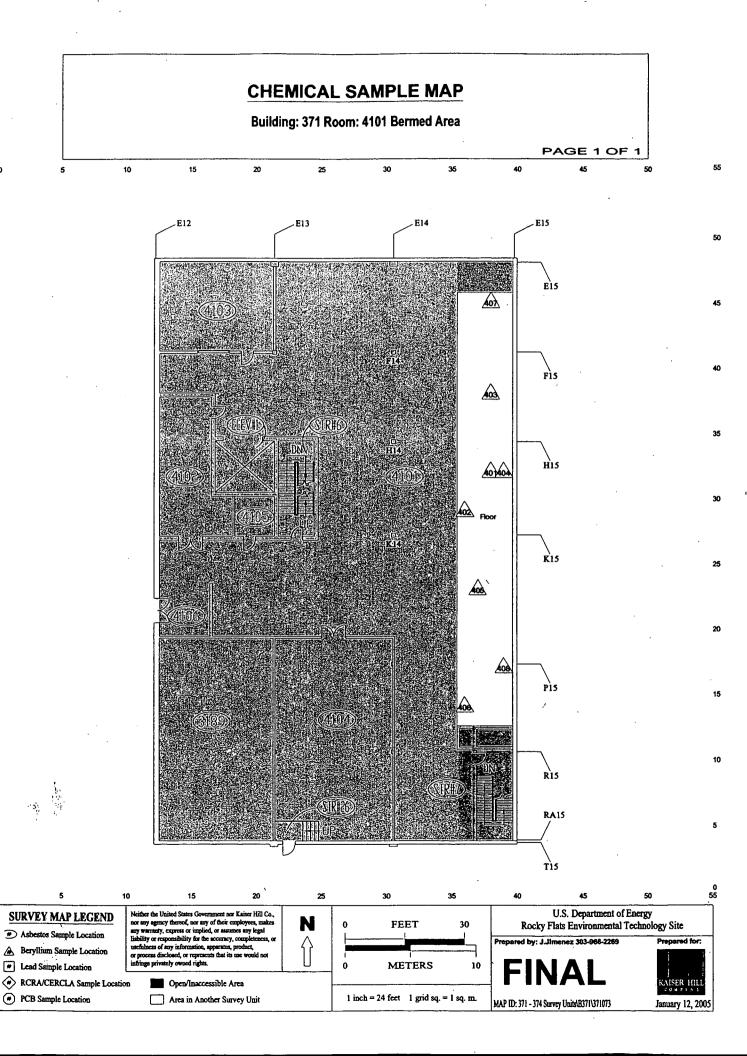
Date: 02/25/2005

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Sample Number	Work Pkg	Коош	Location	Туре	Rin No	Analyte	Concentration	
3			•					ľ
MCCAFFERTY, RUTH								
371-02102005-84-278	4	4102	FINAL BE SAMPLES-SURVEY UNIT 371-068	WIPE	0520834	BERYLLIUM AND B	< 0,1000 _ UG/100CM2	
371-02102005-84-279	<b>T</b>	4101	FINAL BE SAMPLES-SURVEY UNIT 371-066	WIPE	0520934	BERYLLIUM AND B	< 0.1000 _ UG/100CM2	
371-02102005-84-280	4	4101	FINAL BE SAMPLES-SURVEY UNIT 371-088	WIPE	05Z0834	BERYLLIUM AND B	< 0,1000 _ UG/100CM2	
371-02102005-84-281	4	4101	FINAL BE SAMPLES-TOP OF N2 LINE	WIPE	05Z0834	BERYLLIUM AND B	< 0.1000 _ UG/100CM2	
371-02102005-84-282	4	4101	FINAL BE SAMPLES-TOP OF SUPPLY AHU	WIPE	0520934	BERYLLIUM AND B	< 0.1000 _ UG/100CM2	
371-02102005-84-283	Ψ.	4101	FINAL BE SAMPLES-TOP OF SPRINKLER LINE	WIPE	0520934	BERYLLIUM AND B	< 0.1000 _ UG/100CM2	
371-02102005-84-284	4	4101	FINAL BE SAMPLES-TOP OF ANGLE IRON	WIPE	05Z0934	BERYLLIUM AND B	< 0.1000 _ UG/100CM2	
371-02102005-84-285	, T	4101	FINAL BE SAMPLES-HORIZONTAL LIP EXHAUST DUCT	WIPE	0520934	BERYLLIUM AND B	< 0.1000 _ UG/100CM2	
Buildin	Building Subtatal: 25							
Hygienis	Hygienist Subtotal: 25						•	
Company	Company Subtotal: 25							
ຜູ້	Grand Total 25		***************************************			•		
			85					



IHISR\_SAMPLE\_RESULTS\_REPORT Date: 02/24/2005

Industrial Hygiene Information System Sample Results Report

SURFACE

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Page:

FINAL SURVEY UNIT 371-073

Sample Number	Work Pkg	Воош	Location	Туре	Rin No	Analyte	Concentration
KH MCCAFFERTY, RUTH	n N			•			
371-02212005-84-401		4101	FINAL BE SWIPE-BERMED AREA	WIPE	0500581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-402		4101	FINAL BE SWIPE-BERMED AREA	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-403		4101	FINAL BE SWIPE-BERMED AREA	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-404		4101	FINAL BE SWIPE-BERMED AREA	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-405		4101	FINAL BE SWIPE-BERMED AREA	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-406	٨	4101	FINAL BE SWIPE-BERMED AREA	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-407		4101	FINAL BE SWIPE-BERMED AREA	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02212005-84-408		4101	FINAL BE SWIPE-BERMED AREA	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
± 0	Building Subtotal: 8 Hyglenist Subtotal: 8 Company Subtotal: 8 Grand Total 8		e -			·	

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Building: 371 Rooms: 3168, A & B

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Wall 1 3168B Wall 2 Wall 3

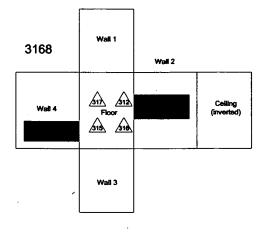
Wall 1 3168A Wall 4 Wall 2

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3168A 3168 3168B 25

**SURVEY MAP LEGEND** 

Asbestos Sample Location

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A Beryllium Sample Location

₩ Lead Sample Location

RCRA/CERCLA Sample Location

PCB Sample Location

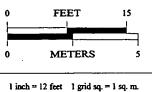
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Open/Inaccessible Area

Area in Another Survey Unit

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U.S. Department of Energy Rocky Flats Environmental Technology Site

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January 13, 2005

MAP ID: 371 - 374 Survey Units\B371\371074

IHISR\_SAMPLE\_RESULTS\_REPORT Date: 02/24/2005

FINAL SURVEY UNIT 371-074

# Industrial Hygiene Information System Sample Results Report

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Sample Number	Work Pkg	Ноот	Location	Туре	Rin No	Analyte	Concentration
<i>H</i> ICCAFFERTY, RUTH	ă ,	,					
371-02192005-84-312		3168	FINAL BLDG. BE SWIPES	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02192005-84-313		3168	FINAL BLDG, BE:SWIPES	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02192005-84-314		3168	FINAL BLDG. BE SWIPES	WIPE	05D0581	BERYLLIUM AND B	< 0.1000_UG/100CM2
371-02192005-84-315		3168	FINAL BLDG, BE SWIPES	WIPE	05D0581	BERYLLIUM AND B	BERYLLIUM AND B < 0.1000 _ UG/100CM2
371-02192005-84-316		3168	FINAL BLDG. BE SWIPE-HORIZ	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
371-02192005-84-317		3168	FINAL BLDG. BE SWIPE	WIPE	05D0581	BERYLLIUM AND B	< 0.1000 _ UG/100CM2
Buildin	Building Subtotal: 8						
Hygieni	Hygienist Subtotal: 8						
Compan	Company Subtotal: 6		٠				
ð	Grand Total 6					120	

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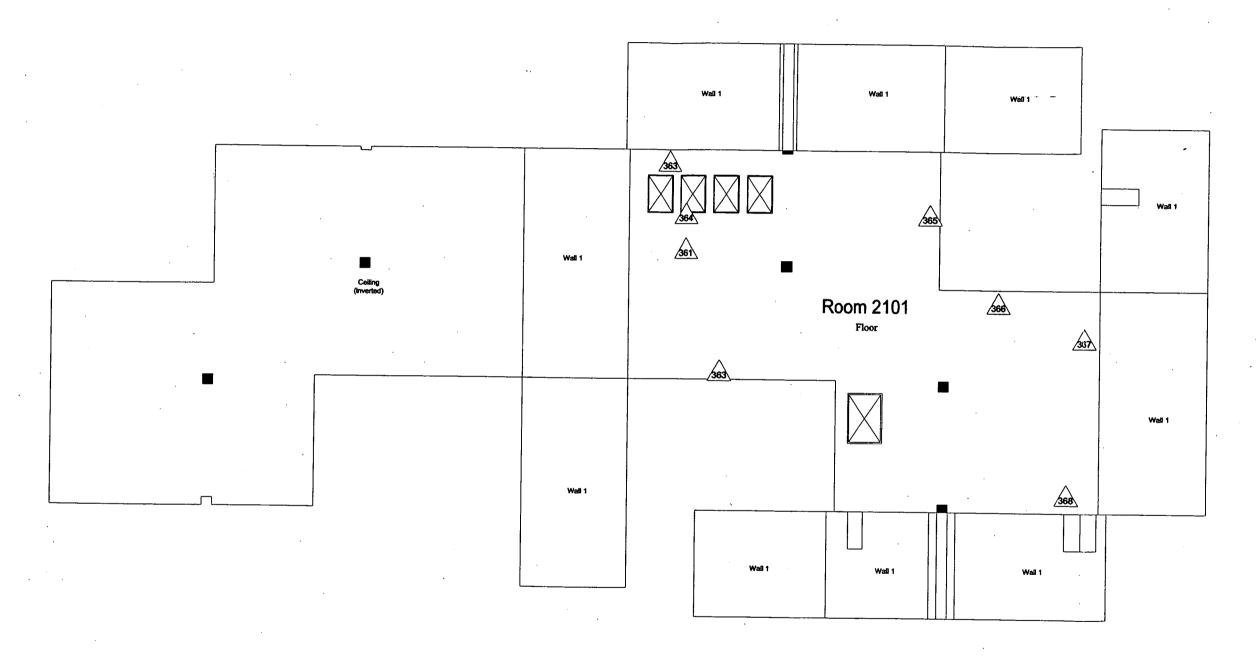
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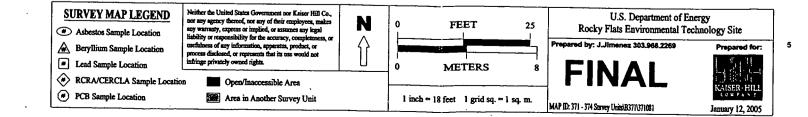
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## **CHEMICAL SAMPLE MAP**

**Building: 371 Room: 2101** 

PAGE 1 OF 1





Date: 02/24/2005

FINAL SURVEY UNIT 371-081

Page:

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SURFACE

Industrial Hygiene Information System

Sample Results Report

< 0.1000 \_ UG/100CM2 < 0.1000 \_ UG/100CM2 < 0.1000 \_ UG/100CM2 < 0.1000\_ UG/100CM2 < 0.1000 \_ UG/100CM2 < 0.1000 \_ UG/100CM2 BERYLLIUM AND B < 0.1000\_UG/100CM2 BERYLLIUM AND B < 0.1000\_UG/100CM2 Concentration BERYLLIUM AND B Analyte 05D0581 05D0581 05D0581 0500581 05D0581 05D0581 05D0581 0500581 Rin No 778 WIPE WIPE WIPE WIPE WIPE WIPE WIPE WIPE FINAL BLDG BE SWIPE-WALKWAY FINAL BLDG BE SWIPE-TOP OF PUMP FINAL BLDG BE SWIPE-TOP OF COOLING WATER PIPING FINAL BLDG BE SWIPE-T902B FINAL BLDG BE SWIPE FINAL BLDG BE SWIPE FINAL BLDG BE SWIPE FINAL BLDG BE SWIPE Location Room 2101 2101 2101 2101 2101 2101 2101 2101 Work Pkg Building Subtotal: 8 Hygienist Subtotal: 8 Company Subtotal: 8 Grand Total 8 MCCAFFERTY, RUTH Sample Number 371-02212005-84-361 371-02212005-84-362 371-02212005-84-363 371-02212005-84-365 371-02212005-84-366 371-02212005-84-364 371-02212005-84-367 371-02212005-84-368

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## CHEMICAL SAMPLE MAP

Building: 371 Room: 2335, 2335A, 2335B, 2355C & 2337

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#### SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- ₩ Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- gency thereof, nor any of their employees, makes nty, express or implied, or assumes any legal



FEET 15 **METERS** 

U.S. Department of Energy

Rocky Flats Environmental Technology Site

MAP ID: 371 - 374 PDS Survey Units 8371 - Phase IB371987 February 23, 2005

Area in Another Survey Unit

Open/Inaccessible Area

1 inch = 12 feet 1 grid sq. = 1 sq. m.

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

FINAL SURVEY UNIT 371-087

SURFACE

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BERYLLIUM AND B < 0.1000\_ UG/100CM2 Concentration Analyte 05D0581 Rin No WIPE Type Location FINAL BE SWIPE Room 2335 Work Pkg Building Subtotal: 1 MCCAFFERTY, RUTH Sample Number 371-02212005-84-358

Company Subtotal: 1 Grand Total 1

Hygienist Subtotal: 1

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Hameroof A. D. D. S. Manner D. S. M. M. S. J. M. J. S. M. W. M. S. J. J. M. J. M. S. J. M. 
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IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

FINAL SURVEY UNIT 371-087

SURFACE

Page:

Concentration

1 of 1

Analyte Rin No Туре Location **Воо**ш Work Pkg Sample Number

BERYLLIUM AND B < 0.1000\_UG/100CM2

05D0581

WIPE

FINAL BE SWIPE

2335A

МССАРГЕЯТУ, ВОТН 371-02212005-84-356 Building Subtotal: 1 Hyglenist Subtotal: 1

Company Subtotal: 1

Grand Total 1

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SURFACE

Page:

Concentration

Analyte

Rin No

Type

Location

Room

Work Pkg

Sample Number

1 of 1

FINAL SURVEY UNIT 371-087

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

MCCAFFERTY, RUTH

371-02212005-84-357

BERYLLIUM AND B < 0.1000 \_ UG/100CM2

0500581

WIPE

FINAL BE SWIPE

23358

Building Subtotal: 1

Hyglenist Subtotal: 1

Company Subtotal: 1

Grand Total 1

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SURFACE

1 of 1

Page:

Concentration

Analyte

Rin No

70

Location

Room

Work Pkg

Sample Number

FINAL SURVEY UNIT 371-087

IHISR\_SAMPLE\_RESULTS\_REPORT

Date: 02/24/2005

WIPE FINAL BE SWIPE 2337 MCCAFFERTY, RUTH 371-02212005-84-359

Building Subtotal: 2 Hygienist Subtotal: 2

BERYLLIUM AND 8 < 0.1000\_UG/100CM2 BERYLLIUM AND B < 0.1000\_UG/100CM2

0500581 05D0581

WIPE

FINAL BE SWIPE

2337

371-02212005-84-360

Company Subtotal: 2

Grand Total 2

(c)

# **ATTACHMENT V**

Data Quality Assessment

#### DATA QUALITY ASSESSMENT (DQA)

#### **VERIFICATION & VALIDATION OF RESULTS**

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium).

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1, and beryllium in E-2. A data completeness summary for all results is given in Table E-3.

All relevant quality records supporting this report are maintained in the B371 Characterization Project Files. The regulators will submit this report to the CERCLA Administrative Record for permanent storage within 30 days of approval. All radiological data are organized into survey packages, which correlate to unique survey units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the transuranic DCGL<sub>w</sub> (100 dpm/100cm<sup>2</sup>).

#### **SUMMARY**

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification.

Based upon an independent review of the radiological data, it is determined that the original project DQOs satisfied site PDSP guidance. All facility contamination levels were below applicable unrestricted release levels, except as noted above. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits.

Isolation Controls have been implemented to prevent the inadvertent introduction of further contamination into the facility. On this basis, the following B371 areas meet the RLCP and PDSP DQO criteria with the confidences stated herein:

- 1. Building 371 Exterior
- 2. East Annex Interior
- 3. Building 376
- 4. T376A
- 5. T371H
- 6. T371I
- 7. T371J
- 8. T371K

Table E-1 V&V of Radiological Surveys – B371 Phase II (B371 Exterior, B371 East Annex Interior, B376 & B376A Interior and Exterior, T371H/I/J/K Interior and Exterior)

V&V CRITERIA, RADIO		K-H RSP 16.00 S MARSSIM (NU		
	QUALITY REQUIREMENTS			
	Parameters	Measure	Frequency	COMMENTS
ACCURACY	initial calibrations	80% <x<120 %</x<120 	≥1	Calibration using Alpha Group procedure and approved technicians.
•	daily source checks	80% <x<120 %</x<120 	≥1/day	Performed daily/within range.
<u> </u>	local area background: Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected Ranges <10 cpm
PRECISION	field duplicate measurements for TSA	≥5% of real survey points	≥100% packages	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Units 371001 through 371005, 371008, 371023, 371039, 371046, 371053, 371056 through 371058, 371066, 371073, 371074, 371081, 371087	statistical	NA	Systematic and random w/ statistical confidence.
	Survey Maps	NA	NA	Random measurement locations controlled/mapped to ±1m.
	Controlling Documents (Characterization Pkg; RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	units of measure	dpm/100cm <sup>2</sup>	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys	>95%	NA	
SENSITIVITY	usable results vs. unusable detection limits	>95%  TSA: ≤50  dpm/100cm <sup>2</sup> RA: ≤10  dpm/100cm <sup>2</sup>	all measures	MDAs ≤ 1/2 DCGL <sub>w</sub> per MARSSIM guidelines.

Table E-2 V&V of Beryllium Results – B371 Phase II (B371 Exterior, B371 East Annex Interior, B376 & B376A Interior and Exterior, T371H/I/J/K Interior and Exterior)

V&V CRITERIA, CHE	MICAL ANALYSES	DATA PACK	AGE	
BERYLLIUM	Prep: NMAM 7300 METHOD: OSHA ID-125G	LAB>	Johns Manville Corp. Denver, Co.	
QUAL	ITY REQUIREMENTS	RIN>	RIN 05D0581 Sample #s 376A-02212005-84-331 through 334, 376-02212005-84-335 through 342, 371K-02192005-84-328 through 330, 371TH-02192005-84-323 through 325, 371I-02192005-84-326, 371J-02192005-84-327, 371TH-02122005-84-344 and 345, 371K-02122005-343, 371-02102005-84-261 through 285, 371-02122005-84-346 through 371, 371-02122005-84-373 through 376, 371-02122005-84-378 through 388, 371-02122005-84-391 through 408, 371-02192005-84-286 through 317	
		Measure	Frequency	COMMENTS
ACCURACY	Calibrations Initial Continuing LCS/MS	linear calibration 80%<%R<120% 80%<%R<120%	≥1 ≥1 ≥1	No qualifications significant enough to change project decisions, i.e., classification of Type 3 facilities confirmed. All
	Blanks - lab & field	<mdl< td=""><td>21</td><td>results were below associated action levels.</td></mdl<>	21	results were below associated action levels.
	interference check std (ICP)	NA	NA	
PRECISION	Laboratory Control Sample Duplicate	80%<%R<120% (RPD<20%)	≥1 <u> </u>	
	field duplicate	all results < RL	21	]
REPRESENTATIVENESS	coc	Qualitative	NA	
	hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	·
COMPARABILITY	measurement units	ug/100cm <sup>2</sup>	NA	
COMPLETENESS	Plan vs. Actual samples usable results vs. unusable	>95% >95%	NA .	]
SENSITIVITY	detection limits	MDL of 0.10ug/100cm <sup>2</sup>	all measures	

PDSR, B3.. Phase II (Area AP / AN (Column Lines 12 – 15) B371 Exterior, T376A, B376, T371K, & T371H, I, &J Rocky Flats Environmental Technology Site

# Table E-3 Data Completeness Summary – B371 Phase II (B371 Exterior, B371 East Annex Interior, B376 & B376A Interior and Exterior, T371H/I/J/K Interior and Exterior)

ANALYTE	Area/Unit/ Set/Room	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC )	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Area AQ Unit 371001 T376A Interior	4 biased smears	4 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 376A-02212005-84-331 through 334 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )
Beryllium	Area AQ Unit 371002 B376 Interior	6 biased smears	6 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 376-02212005-84-335 through 340 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)
Beryllium	Area AQ Unit 371003 T371K Interior	3 biased smears	3 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371K-02192005-84-328 through 330 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)
Beryllium	Area AQ Unit 371004 T371H/I/J Interiors	5 biased smears	5 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371TH-02192005-84-323 through 325, 371I-02192005-84-326, 371J-02192005-84-327 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)
Beryllium	Area AQ Unit 371005 B376A, B376, T371H/I/J/K Exteriors	5 biased smears	5 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 376-02122005-84-341 and 342, 371TH-02122005-84-344 and 345, 371K-02122005-343 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )
Beryllium	Area AQ Unit 371008 B371 Exterior	10 biased smears	10 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02122005-84-391 through 400 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )

Table E-3 Data Completeness Summary - B371 Phase II (B371 Exterior, B371 East Annex Interior, B376 & B376A Interior and Exterior, T371H/I/J/K Interior and Exterior)

ANALYTE	Area/Unit/ Set/Room	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC )	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Area AP Unit 371023 B371 East Annex Rooms 3187A/B, 3189 All Surfaces	6 biased smears	6 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02192005-84-290 through 293, 371-02192005-84-286 through 289 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )
Beryllium	Area AP Unit 371039 B371Dock 18T Floor Only	5 biased smears	5 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02192005-84-302 through 306 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)
Beryllium	Area AP Unit 371046 B371 Room 3191 All Surfaces	5 biased smears	5 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02192005-84-307 through 311 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)
Beryllium	Area AP Unit 371053 B371 East Admin. 1st Floor Only	10 biased smears	10 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02122005-84-379 through 388. No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )
Beryllium	Area AP Unit 371056 B371 Stairwells #6 & 7 All Surfaces	5 biased smears	5 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02122005-84-346 through 350 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)
Beryllium	Area AP Unit 371057 B371 Room 3185 All Surfaces	8 biased smears	8 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02192005-84-294 through 301 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )
Beryllium	Area AP Unit 371058 B371 Elevator #1 All Surfaces	5 biased smears	5 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02122005-84-351 through 355 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )

PDSR, B. Phase II (Area AP / AN (Column Lines 12 – 15) B371 Exterior, T376A, B376, T371K, & T371H, I, &J Rocky Flats Environmental Technology Site

ANALYTE	Area/Unit/ Set/Room	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC )	Project Decisions (Conclusions),& Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Area AF Unit 371065 B371 Basement Admin. Area >6 ft. BGS	8 biased smears	8 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02122005-84-369 through 371, 371-02122005-84-373 through 376, 371-02122005-84-378 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )
Beryllium	Area AM Unit 371066 B371 Rooms 4101 through 4106 All Surfaces	25 biased smears	25 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02102005-84-261 through 285 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)
Beryllium	Area AM Unit 371073 B371 Room 4101 Bermed Area Floor Only	8 biased smears	8 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02122005-84-401 through 408 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )
Beryllium	Area AP Unit 371074 B371 Room 3168 All Surfaces	6 biased smears	6 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02192005-84-312 through 317 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)
Beryllium	Area AF Unit 371081 B371 Room 2101 All Surfaces	8 biased smears	8 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02122005-84-361 through 368 No results above action level (0.2ug/100cm <sup>2</sup> ) or investigative level (0.1ug/100cm <sup>2</sup> )
Beryllium	Area AF Unit 371087 B371 Rooms 2335/A/B/C & 2337 All Surfaces	5 biased smears	5 biased smears	No beryllium contamination found at any location, all results below the regulatory limit	OSHA ID-125G RIN 05D0581 Sample numbers 371-02122005-84-356 through 360 No results above action level (0.2ug/100cm²) or investigative level (0.1ug/100cm²)

ANALYTE	Area/Unit/ Set/Room	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Area AQ Unit 371001 T376A Interior	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 10 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AQ Unit 371002 B376 Interior	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 6 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AQ Unit 371003 T371K Interior	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 8 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AQ Unit 371004 T371H/I/J Interiors	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 13 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AQ Unit 371005 B376A, B376, T371H/I/J/K Exteriors	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 10 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AQ Unit 371008 B371 Exterior	158 α TSA (158-Random/Systematic) 158 α RSA (158-Random/Systematic) 8 QC TSA 3 % scanned	158 α TSA (158-Random/Systematic) 158 α RSA (158-Random/Systematic) 8 QC TSA 5 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels

ANALYTE	Area/Unit/ Set/Room	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Area AP Unit 371023 B371 East Annex Rooms 3187A/B, 3189 All Surfaces	16 α TSA (16-Random/Systematic) 16 α RSA (16-Random/Systematic) 2 QC TSA 100% floors scanned 25% lower walls	16 α TSA (16-Random/Systematic) 16 α RSA (16-Random/Systematic) 2 QC TSA 100% floors scanned 32% lower walls	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AP Unit 371039 B371Dock 18T Floor Only	10% upper walls/ceiling 15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 50 % scanned	17% upper walls/ceiling 15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 56 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AP Unit 371046 B371 Room 3191 All Surfaces	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 23 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AP Unit 371053 B371 East Admin. 1st Floor Only	17 α TSA  (17-Random/Systematic)  17 α RSA  (17-Random/Systematic)  2 QC TSA  3 % scanned	17 α TSA (17-Random/Systematic) 17 α RSA (17-Random/Systematic) 2 QC TSA 13 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AP Unit 371056 B371 Stairwells #6 & 7 All Surfaces	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 30 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AP Unit 371057 B371 Room 3185 All Surfaces	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 10% scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 21% scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels

Rocky Flats Environmental Technology Site

ANALYTE	Area/Unit/ Set/Room	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Area AP Unit 371058 B371 Elevator #1 All Surfaces	16 α TSA (16-Random/Systematic) 16 α RSA (16-Random/Systematic) 2 QC TSA 25% walls/ceiling scanned	16 α TSA (16-Random/Systematic) 16 α RSA (16-Random/Systematic) 2 QC TSA 29% walls/ceiling scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AF Unit 371065 B371 Basement Admin. Area >6 ft. BGS	19 α TSA (19-Random/Systematic) 19 α RSA (19-Random/Systematic) 2 QC TSA 3% scanned	19 α TSA (19-Random/Systematic) 19 α RSA (19-Random/Systematic) 2 QC TSA 15 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AM Unit 371066 B371 Rooms 4101 through 4106 All Surfaces	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 3 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels  Small area to be removed as LLW (rad by default)
Radiological	Area AM Unit 371073 B371 Room 4101 Bermed Area Floor Only	22α TSA (22-Random/Systematic) 22 α RSA (22-Random/Systematic) 2 QC TSA 100 % scanned	22 α TSA (22-Random/Systematic) 22 α RSA (22-Random/Systematic) 2 QC TSA 100 % scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AF Unit 371074 B371 Room 3168 All Surfaces	16 α TSA (16-Random/Systematic) 16 α RSA (16-Random/Systematic) 2 QC TSA 100% floors scanned 25% lower walls scanned 10% upper walls/ceiling scanned	16 α TSA (16-Random/Systematic) 16 α RSA (16-Random/Systematic) 2 QC TSA 100% floors scanned 34% lower walls scanned 60% upper walls/ceiling scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels

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ANALYTE	Area/Unit/ Set/Room	Sample Number Planned (Real & QC) <sup>A</sup>	Sample Number Taken (Real & QC )	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Area AF Unit 371081 B371 Room 2101 All Surfaces	15 a TSA (15-Random/Systematic) 15 a RSA (15-Random/Systematic) 2 QC TSA 15 media 100% floors and shaved areas scanned 25% lower walls scanned 10% upper walls/ceiling scanned	15 α TSA (15-Random/Systematic) 15 α RSA (15-Random/Systematic) 2 QC TSA 15 media 100% floors and shaved areas scanned 34% lower walls scanned 12% upper walls/ceiling scanned	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AF Unit 371087 B371 Rooms 2335/A/B/C & 2337 All Surfaces	18 a TSA (18-Random/Systematic) 18 a RSA (18-Random/Systematic) 2 QC TSA 100% floors scanned 25% walls/ceiling	18 α TSA (18-Random/Systematic) 18 α RSA (18-Random/Systematic) 2 QC TSA 100% floors scanned 25% walls/ceiling	No elevated contamination at any location; all values below PDS unrestricted release levels  No result above action level	Transuranic DCGLs  No result above action levels
Radiological	Area AF DOP Survey Area B Rooms 1001, 1002, 1121, 1121A, 1123, 1124, Elevator #1, Stairwell #6 Slab ONLY	15-Random Gamma insitu 5-Biased 100% floor scanned	15-Random Gamma insitu 5-Biased 100% floor scanned	No elevated contamination at any location; all values below DOP levels (100 nCi/g surface and 7 nCi/g volumetric)  No result above action level	No result above action levels  Insitu Gamma sample locations 2 & 5 (slab of elevator #1) both included in the field of view and reported in one result. No investigation required.

## **ATTACHMENT W**

Historical Review

Facility ID: Building 371, East Annex (Interior) and Exterior (including Docks 2, 5 and 18T)

#### Anticipated Facility Type (1, 2, or 3):

The Building 371 Exterior and Support Facility contained office and administration, waste container staging/storage, various control rooms, machine and electrical shops, and chemical laboratories and storage. Historically, contamination levels outside these areas of activities were very low, however, a Facility Type 3 category assignment is required based on proximity to Building 371 process areas.

Buildings 376, T376A, T371H, T371I, T371I and T371K were detached Support Outbuildings for office, administration and supply storage. Historically, no contamination levels were discovered in these areas which supports a Facility Type 1 category assignment.

#### **Building 371Exterior Physical Description:**

The Building 371 exterior consists of a four-level building of reinforced concrete housing approximately 315,022 square feet of floor space. The overall dimensions are approximately 420 feet in the east/west direction and 250 feet in the north/south direction. The stories are referred to as the sub-basement at relative elevation 60 feet, the basement at elevation 76 feet, the ground floor at elevation 100 feet, and the attic at elevation 115 feet. The roof elevation is approximately 127 feet. The building shell is "hardened" to ensure that it meets the design criteria for the containment of particulate radioactive material. The term "hardened" is defined as constructed to withstand the forces imposed by a design-basis earthquake and/or tornado. For exterior purposes, the hardened construction includes the exterior walls and roof. The exterior walls are 16" thick above grade and up to 20" thick below grade. The roof is a flat decking of 8" thick reinforced concrete with a center ridge line running east/west causing a north/south slope for runoff. It also has an overlay of tar and gravel. There are no windows in the exterior walls of the hardened section of Building 371.

Building 371 rests on reinforced concrete caissons, cast in place in holes drilled into bedrock. The Building 371 footing/foundation contains approximately 400 cassions. The maximum length of the caissons is 48 feet and the maximum diameter is 6 feet. The caissons are capped with concrete pads, and concrete grade beams are cast in place atop the capped caissons. The grade beams are cast integrally with concrete basement floor sections to form a monolithic supporting structure. Void-forming material is used between compacted backfill and the grade beams and floor.

Since groundwater is present above the basement floor level (approx. 16 feet below the existing ground surface), a combined subsurface drainage system is included in the design for Building 371. The drainage system, connected to gravity outfalls, prevents hydrostatic pressure on the sub-basement and basement walls and floors. The subsurface drainage system consists of porous concrete pipe laid around the perimeter of the area. Each perimeter pipe drains into a gravity outfall pipe that reaches the surface and drains into North Walnut Creek, above the monitoring ponds. Below and above grade, the framing consists of walls, columns, and beams, including roof beams, of reinforced concrete.

#### Area AN/AF (Interior) Physical Description:

The Support Facility is an integral part of the Building 371 structure. It consists of three full levels corresponding to the basement, ground floor and attic. A partial sub-basement level contains a elevator, stairway (#6), and decontamination area only. The Support Facility is also reinforced concrete below grade, but the superstructure is a structural steel frame. It utilizes structural steel framing for vertical loads and concrete walls for lateral loads. The Support Facility exterior is not hardened against missiles to the same extent as Building 371. The offices and maintenance portion of the Support Facility is constructed over the southern projection of the Building 371 basement. It is a single level facility with a structural steel frame and precast wall panels.

#### B376, T376A, T371H, T371I, T371J and T371K Physical Description:

These support outbuildings are office spaces and supply storage facilities which support the 371 Closure Project and make up the 371A Cluster. They are located due north of Building 374. These structures are classified as temporary buildings and are referenced in the Site SAR, Reference 2-1.

T376A, T371H, T371I, T371I and T371K are a collection of trailers converted into office space. Each single-wide unit is approximately ten feet wide by forty feet long, and is a standard trailer design using wood framing and sheet metal siding and roofing systems. T371H-J are single-wide trailers and are connected along their long sides into a triple wide unit. T371K is a standard double-wide trailer with wood siding. T376A is a standard erroller.

Building 376 is a single-story light metal framed building with corrugated metal siding and roofing. It is approximately sixty feet long and fifty feet wide, with an eave height of eight feet. The building is comprised of one large open office area surrounded by four hard walled offices and a split bathroom facility. The building interior has standard drywall treatment for partitions and has an acoustic dropped ceiling. The building is constructed on a cast-in-place concrete spread footing and stemwall and has a four inch concrete slab.

#### **Historical Operations:**

All of the HVAC and Utilities Systems were controlled from the Central Utilities Control Room 2107. Controls on the central control board permitted starting and stopping equipment as well as controlling such things as room differential pressure and temperatures. The Building 371 Data Acquisition and Control System (DACS) provided operating information on almost 1000 building utility and HVAC parameters and alarms at the operator's console within the control room. The DACS were upgraded in 1995 to provide broader indications of temperatures, flows and pressures for various utilities and ventilation systems. Examples of parameters monitored by DACS included the exhaust plenum temperatures and pressures, CSV oxygen levels, building room temperature and pressures, Selective Alpha Air Monitor (SAAM) alarms, filter plenum fire alarms and exhaust stack emissions. The DACS displayed data, graphs, alarms and building system diagrams.

Fire Suppression Riser 371-A, an 8" pipe, resides in Room 3154. This riser supplied water from the DWS System to it's 4" distribution piping. Distribution included the ground floor, office areas, cafeteria, east maintenance dock, south cafeteria dock, basement and other portions of the support facility without radiological material areas.

One of four Plutonium Analytical Laboratories, the Liquids Laboratory, was operated in Room 3179. The majority of the work at this laboratory consisted of total alpha and beta counts along with radiochemical analyses for specific isotopes in liquid and solid samples.

Receiving and shipping of onsite and offsite waste, residue, and SNM occurred from Dock 18T. Two additional receiving and shipping docks included Docks 2 and 5.

Various chemicals were stored and managed throughout the B371 complex. Of concern, the KOH and HNO3 storage tanks shared a bermed, compartmentalized area in Room 4101. This chemical makeup area for the facility maintained storage of a variety of chemicals required for facility operations. In addition, the majority of bottled, compressed gases were stored on Docks 18T and 5.

The Breathing Air System utilizes two compressors located in Compressor Room 2103, which is pressurized with respect to the rest of the facility with conditioned outside air. This air system provided clean, dry air to stations inside and outside Building 371 and the Support Facility. This system interfaced with Utility Chilled Water, Plant Air and Cooling Water Systems. No radiological operations occurred in Room 2103.

Waste Container staging was performed in Room 3189, which had racks that were used for multiple drum storage. Drums stored on these racks were not considered stacked. This room was originally designed for storage of Low Specific Activity (LSA) waste and was designated the LSA Storage Room. Room 3189 was also approved for TRU Waste storage outside confinement. Shipping preparations of these waste containers were made here prior to outside transport.

The machine shop was located in Room 3157 and repaired and produced metal parts for basic process maintenance systems. Process equipment included lathes, mills and drills. Some of the machinery required the use of TrimSol in water as a coolant. No radiological operations occurred in Room 3157. Tungsten welding rods were used on occasion for manufacturing.

The electrical shop was located in Room 3159 and repairs and calibrates electrical components and equipment. Repair work required the use of wire pulling lubricant, contact lubricant, contact cleaner and other electrical supplies. Small amounts of hydrochloric acid and plating solution are used in the cleaning and repair of conductivity cells. Lead-acid and nickel-cadmium batteries may also be changed out in this room. No radiological operations occurred in Room 3159.

The sheet metal and pipe shop is located in Room 3148 and produced sheet metal products and repaired piping for the 371/374 Complex. Chemicals used in this process include acetylene, oxygen and/or argon gas, commercial cleaners, petroleum solvents, cutting and tap oils. Tungsten welding rods were used on occasion for manufacturing.

The paint shop is located in Room 3160. The shop used both latex and oil-based paints, water and mineral spirits, respectively to thin the paints.

#### **Current Operational Status:**

Phase II areas are no longer operational. All major process equipment and associated piping have been removed during the recent D&D phase. The following systems and/or equipment will remain in place during building demolition:

- Building HVAC systems.
- Instrument Air, 1000 feet, Rooms 3025, 3171, 3173, 3179, 3181, 3185, 3187A, 4101, 4102, 4104, 2101, 2103, 2001, 2116
- Plant Air, 540 feet, Rooms 3156, 3157, 3163, 3185, 2101, 2103
- Steam and Condensate Return, 800 feet, Rooms 3159, 3157, 3163, 3179, 3171, 3165, 3187A, 4101, 4102, 2001, 2102, 2113
- Miscellaneous non-process water
- Miscellaneous utility equipment, Process Water and Process Chiller Water, 120 feet, Rooms 2101 & 2103.
- Miscellaneous electrical conduit
- Various steel support brackets
- Elevator car
- Fire suppression system to include associated riser stations
- Various electrical panels and wiring

#### **Contaminants of Concern**

#### Asbestos

Asbestos containing building material is not present in or on areas covered in the scope of this report (previously removed), with the exception of a ACM in the tar impregnated roofing felt located on the roof of B371. This ACM will be removed from the rubble during demolition and disposed of as sanitary waste.

#### Lead

Limited analyses for Pb in paint on walls, tanks, and other surfaces were performed in Phase II areas using a Niton portable X-ray flourescence unit. These results show low levels of lead in paint in these buildings. No further characterization for lead or other metals in paint was conducted. Environmental Waste Compliance Guidance #27, Leadbased paint (LBP) and Lead-based Paint Debris Disposal, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes and need not be characterized unless the potentially lead-containing component is to be scabbled or otherwise comprise a separate waste stream. Hence, the data in Table 3-4 are presented primarily for Occupational Safety and Industrial Hygiene use in planning PPE and respiratory protection for scabbling operations.

A visual inspection of the Building 374 interior by Environmental Compliance personnel verified the absence of hazardous waste residuals and/or stains on the floor/concrete slab, walls, or ceiling.

#### **RCRA/CERCLA Constituents**

Based upon the Reconnaissance Level Characterization Report for the 371/374 Building Cluster, dated August 28, 2000, Revision 0, personnel interviews, facility walk-downs, and historical process knowledge (WSRIC/WEMS), only one room in Phase II of Building 371 previously managed hazardous wastes. Specifically, Room 3189 was a previously permitted hazardous waste container storage unit. This room has been closed in accordance with the 371/374 Decommissioning Operations Plan (DOP). This determination was documented in a contact record dated December 21, 2004. The concrete generated from the demolition of the areas included in the scope of this report can be used for onsite recycling in accordance with the Concrete Recycling RSOP.

#### **PCBs**

Free-flowing or exposed PCBs have never been used or transferred in Building 374 interior. No records of PCB sampling within Cluster facilities were readily available. If any PCB oils had been released from a transformer or other piece of equipment in the past, such oils would have been cleaned up pursuant to standards applicable to those times, probably without any documentation. All older transformers were reportedly tested for PCB-containing oils. Any PCB-containing oils were flushed and replaced with non-PCB oils. PCB ballasts in fluorescent light fixtures were present throughout the area, and have been removed and disposed of.

#### **Radiological Contaminants**

The contaminants of concern for the 371 project are transuranic alpha-emitting radioisotopes (including Pu-238, Pu-239/240, Pu-242, Am-241, and Uranium). Based on findings documented in Radiological Engineering TBD-00157, Rev. 1, alpha-only surveys assure that the unrestricted-release limits for any other isotopes that may exist in Building 371 will not be exceeded.

#### **Environmental Restoration Concerns**

UBC sampling performed inside the B371 footprint has been performed. Based on the preliminary results, no remedial action is anticipated.

#### References

- (1) Reconnaissance Level Characterization Report for the 371/374 Building Cluster, dated August 28, 2000, Revision 0.
- (2) Building 371/374 Complex BIO, dated June 12, 2000, Revision 4.
- (3) Building 371/374 System Evaluation Report 1, dated October 29, 2002, Revision 5.
- (4) 371Closure Project Management Plan, dated July 31, 2001, Revision 0.

#### **Further Actions**

Complete the PDS process.

# D&D Facility Characterization Historical Site Assessment - Interview Checklist

Facility ID: Building 371, Phase II - Area AP/AF (Column Lines 12-15); B371 Exterior; T376A, B376, T371K, and T371H, I, & J

Facility Type (1, 2, or 3): Type 3 (Phase II); Type 1 (T376A, B376, T371K, and T371H, I, & J)

This facility specific Historical Site Assessment (HSA) - Interview Checklist has been conducted in accordance with:

D&D Characterization Protocol, RFETS MAN-077-DDCP, latest version, and Facility Disposition Program Manual, RFETS MAN-076-FDPM, latest version

Personnel Interviewed (Name, Title, and Function):

RICHARD LINK - RADIOLOGICAL ENGINEER

What time frame did the interviewee work in the facility?

HEALTH PHYSICIST, MANAGER OF RAD SAFETY, ETC. - B371 - THIS AREA WAS ASSIGNED TO ME FROM 1980 THROUGH 1995.

Has the building configuration changed since you worked in the building? If so, in what way?

THE CONFIGURATION FOR THE AREAS INCLUDED IN PHASE II HAS NOT CHANGED DRAMATICALLY SINCE THE BUILDING WAS PUT INTO OPERATION. THE ONLY EXCEPTION IS AFTER TO D&D ACTIVITIES BEGAN, EQUIPMENT AND ROOMS WERE STRIPPED OF SOME EQUIPEMENT AND MODIFIED TO MEET THE NEEDS OF DEMOLITION.

What operations/processes were conducted in the area during the interviewee's time at the facility?

NO PROCESS RELATED ACTIVITIES EVER OCCURRED IN THIS AREA. THE ONLY ACTIVITIES THAT TOOK PLACE WERE ADMINISTRATIVE AND MACHINING OPERATIONS TO SUPPORT ACTIVITIES IN THE PROCESS AREAS OF B371. PHASE II ALSO INCLUDED UTILITY AREAS AND AN ELECTRICAL SHOP AREA THAT WERE NEVER PART OF THE CONTAMINATED AREA. THE BASEMENT AREA ALSO INCLUDED THE SOE CONTROL ROOM WHERE THE BUILDING VENTILATION WAS MONITORED. ROOMS 3187A/B WERE USED AS A SHIPPING / RECEIVING DOCK FROM WHICH ALL WASTE AND MATERIAL WAS MOVED INTO AND OUT OF THE BUILDING. AREAS LOCATED IN PHASE II WERE ALWAYS VERY WELL MAINTAINED AND NO UNCONTROLLED LIQUID SPILLS OCCURRED IN THIS AREA.

What types of equipment were in the building during the interviewee's time in the facility? THE MACHINE SHOP HAD VARIOUS PRESSES AND LATHES USED FOR METAL FABRICATION PURPOSES. AIR COMPRESSORS AND OTHER UTILITIES WERE LOCATED IN THE BASEMENT LEVEL OF PHASE II. IN ADDITION, THE BASEMENT HOUSED THE MONITORING EQUIPMENT FOR THE BUILING VENTILATION AND LIQUID SYSTEMS. Where was the equipment located? (specific rooms/areas) THE MACHINE SHOP WAS LOCATED IN ROOM 3157. THE ELECTRICAL SHOP WAS LOCATED IN ROOM 3159. THE SHEET METAL AND PIPE SHOP IS LOCATED IN ROOM 3148. ALL OF THE HVAC AND UTILITIES SYSTEMS WERE LOCATED IN THE CENTRAL UTILITIES CONTROL ROOM 2107. Were any radioactive materials or equipment handled in the area? If so, what types and where? CONTAINERIZED RADIOACTIVE MATERIALS WERE MOVED INTO AND OUT OF THE BUILDING THROUGH ROOM 3187A/B VIA DOCK 18T. THIS WAS THE PRIMARY PATH OF ALL MATERIAL MOVES IN AND OUT OF THE PROCESS AREA. THE REMAINING PORTIONS OF PHASE II WERE NEVER EXPOSED TO RADIOACTIVE MATERIALS, TO MY KNOWLEDGE. Were any chemicals (e.g., Asbestos, Beryllium, Lead, RCRA/CERCLA Constituents, PCBs, etc.) handled in the building? If so, what types and where? CHEM MAKEUP (ROOM 4101) HOUSED ALL THE STOCK CHEMICALS FOR PROCESSES IN B371. THIS CHEMICAL MAKEUP AREA FOR THE FACILITY MAINTAINED STORAGE OF A VARIETY OF CHEMICALS REQUIRED FOR FACILITY OPERATIONS TO INCLUDE POTASSIUM HYDROXIDE AND NITRIC ACID.

Did any spills or uncontrolled release of radioactive materials or chemicals occur while you worked in the building? If so, what types and where?

ONE AREA IN WHICH SPILLS MAY HAVE OCCURRED WAS LOCATED IN A BERMED AREA ON THE EAST SIDE OF ROOM 4101. AT TIMES, VERY LOW LEVEL RADIOACTIVE LIQUIDS WERE POURED INTO THE BERMED AREA AND ALLOWED TO GO THROUGH THE PROCESS DRAINS LOCATED ON THE WALL INTO THE EVAPORATIVE SYSTEM LOCATED IN B374. USUALLY, WHEN THIS OCCURRED, THE AREA WAS IMMEDIATELY WIPED DOWN TO CLEAN UP ANY REMOVABLE CONTAMINATION. THIS AREA DID GET PAINTED PERIODICALLY WHEN PROPER CLEAN UP COULD NOT BE ACHIEVED. THE ONLY OTHER AREA WERE SMALL LEVELS OF CONTAMINATION WERE TRACKED WERE THE DECON ROOMS LOCATED IN THE SUB-BASEMENT AND BASEMENT LEVELS. WORKERS WERE TAKEN TO THESE ROOMS TO BE DECONTAMINATED WHEN NEEDED. THESE AREAS WERE KEPT VERY CLEAN AND WIPED DOWN AFTER ANY EVENT WHICH REQUIRED PERSONNEL DECONTAMINATION. TO MY KNOWLEDGE, THESE AREAS WERE NEVER PAINTED BECAUSE ANY LOW LEVEL CONTAMINATION THAT MAY HAVE BEEN TRACKED ONTO THE FLOOR SURFACES WAS IMMEDIATELY CLEANED.

Were these spills/releases cleaned up? If so, how were cleaned up?

SPILLS WERE ALWAYS WIPED AND SURVEYED AFTER ANY EVENT WHICH REQUIRED POST JOB CLEANING ACTIVITIES.

Do you know of any additional issues, concerns, or process knowledge that could affect facility characterization?

THIS AREA OF B371 WAS ALWAYS VERY WELL MAINTAINED. IT OPERATED MAINLY IN AN ADMINISTRATIVE / UTILITY SUPPORT FUNCTION FOR THE BUILDING. ONLY CONTAINERIZED WASTE WAS EVER MOVED INTO AND OUT OF THE BUILDING IN THIS AREA.

## **ATTACHMENT X**

DOP Survey Area B - Final Results

urvey Area: B	Survey Unit: DOP	В	uilding: 371		
•					
escription: Bldg 371 DOP	Scans			·	<del></del>
Rocky Flats		tal Technol Operational	ogy Site Dec	ommissionir	ng
,	DOP A	ctivity Mea	surements		
br of Measurements 15 Rando	om 5 Bias			Nbr of measurements: 1	28
Eberline Service Gamma			Suri	Gamma face Measurements	
Slab Measurer			Maxim	um: 0.51 nCi/g	
Slab Measurer Maximum:	0.079 nCi/g	,			
	0.079 nCi/g 0.004 nCi/g		Minim	um: 0.20 nCi/g	٠
Maximum:	· ·		Minim	um: 0.20 nCi/g	
Maximum: Minimum:	0.004 nCi/g		Minim	ean: 0.40 nCi/g	
Maximum: Minimum: Mean:	0.004 nCi/g 0.013 nCi/g		Minim Me	ean: 0.40 nCi/g	

Total nCi: 4.23E+05

Total Grams WGPu: 3.48E-05

#### **PRE-DEMOLITION SURVEY FOR BUILDING 371**

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Survey Area: B

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Survey Unit: DOP B

Classification: 2

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**Building: 371** 

Survey Unit Description: Floor Area Only

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Total Area: 131 sq. m.

Total Floor Area: 131 sq. m.

**PAGE 1 OF 1** 

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20 1121A (a) (b) **a** 3 (3) **®** 15 **₿ STR #6** 10 œ (B) (12) (13) ① 4 1



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Smear & TSA Location

Smear, TSA & Sample Location

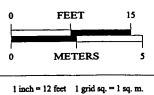
<u>•</u>

Open/Inaccessible Area

Area in Another Survey Unit

Neither the United States Government nor Kaiser Hill Co., nor any agency thereof, nor any of their employees, makes noy warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or unethhases of any information, opporately, produce process disclosed, or represents that its use would not infringe privately owned rights.





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U.S. Department of Energy Rocky Flats Environmental Technology Site

Prepared by: J.Jimenez 303.968.2269





Prepared for:

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MAP ID: 371-374 POSU21 - 374 Servey Units/DOP B

February 7, 2004

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#### EBERLINE SERVICES RFETS' **SUMMARY REPORT**

Spectroscopy Date(s): 2/16/05, 2/17/05

Location: RFETS B371, Sub-Basement Rooms 1001, 1002, 1121, 1124, Lower Floor, Stairwell, Elevator Shaft

Customer: Jay Britten

Description: B371 Floor Area Surveys

Notes: The purpose of the measurements is to identify and quantify the gamma-emitting radionuclides present within floor area surfaces. All spectra are visually reviewed and the final radionuclide peak identifications are performed using the Table of Radioactive Isotopes by Browne and Firestone.

In the initial evaluation of these spectra, all peaks that were observed were identified. No gamma rays for mixed fission or activation products were detected in any of the assays. Contamination was assumed to be evenly distributed within the top 0.39" of surface material over a surface area of 4 square feet.

Analyst:

Reviewer:

CC: ES files

Date:  $\frac{2/22/05}{2/22/05}$ 

Eberline S' RFETS Building 37 Results (Based on u Ratios) 2/22/2005 1:14 PM

Building 371 Sub-Basement Floor Area Surveys (Conducted 2/16/05, 2/17/05)

Spectrum File ID	Room(s)	Area		SNAP Am241 Detected Activity (uCl)	SNAP Am241 Activity Concentration (nCl/g)	SNAP Am241 Concentration MDA (nCl/g)	SNAP Am241 2-Sigma Error (%)	SNAP Pu-239 Activity Concentration (nCi/g)	SNAP Pu-239 Concentration MDA (nCl/g)	Pu-239/240 Activity Concentration (nCVg)	Total Alpha Concentration (Am-241+ Pu- 239/240) (nCl/g)	Assumed Contamination Depth (inches)	Assumed Slab Thickness (inches)	Estimated Average Pu- 239/240 Slab Activity Concentration (nCl/g)	Estimated Average Pu- 239/240+Am-241 Slab Activity Concentration (nCl/g)	Case
02160504	1001	floor 1	<	0.1	< 0.009	0.009		<mda< th=""><th>34.1</th><th></th><th>0.07</th><th>0.390</th><th>7.0</th><th>0.003</th><th>0.004</th><th>2</th></mda<>	34.1		0.07	0.390	7.0	0.003	0.004	2
02160502	1001	floor 6	<	0.1	< 0.009	0.009		<mda< td=""><td>36.6</td><td>0.06</td><td>0.07</td><td>0.390</td><td>·7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	36.6	0.06	0.07	0.390	·7.0	0.003	0.004	2
02160505	1001	floor 7	<	0.1	< 0.009	0.009	na	<mda< td=""><td>35</td><td>0.06</td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	35	0.06	0.07	0.390	7.0	0.003	0.004	2
02160507	1001	floor 8	<	0.1	< 0.009	0.009	na	<mda< td=""><td>35.5</td><td>0.06</td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	35.5	0.06	0.07	0.390	7.0	0.003	0.004	2
02160506	1001	floor 9	<	0.1	< 0.009	0.009	na	<mda< td=""><td>34.6</td><td>0.06</td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	34.6	0.06	0.07	0.390	7.0	0.003	0.004	2
02160509	1001	floor 11	<	0.1	< 0.009	0.009	na	<mda< td=""><td>35.3</td><td>0.06</td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	35.3	0.06	0.07	0.390	7.0	0.003	0.004	2
02160503	1001	floor 12	<	0.1	< 0.010	0.010	na	<mda< td=""><td>34.6</td><td>0.07</td><td>0.08</td><td>0.390</td><td>7.0</td><td>0.004</td><td>0.004</td><td>2</td></mda<>	34.6	0.07	0.08	0.390	7.0	0.004	0.004	2
02160508	1001	floor 13	<	0.1	< 0.009	0.009 ·	na	<mda< td=""><td>36.5</td><td></td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	36.5		0.07	0.390	7.0	0.003	0.004	2
021605B1	1001	B1	<	0.1	< 0.009	0.009	па	<mda< td=""><td>35.5</td><td></td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	35.5		0.07	0.390	7.0	0.003	0.004	2
02160510	1002	floor 4	<	0.1	< 0.008	0.008	_na	<mda< td=""><td>33.7</td><td>0.06</td><td>0.06</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	33.7	0.06	0.06	0.390	7.0	0.003	0.004	2
02160511	1002	floor 14	<	0.1	< 0.009	0.009	na	<mda< td=""><td>34.9</td><td>0.06</td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	34.9	0.06	0.07	0.390	7.0	0.003	0.004	2
02170504	1002	B2	<	0.1	< 0.009	0.009	па	<mda< td=""><td>33.7</td><td>0.06</td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	33.7	0.06	0.07	0.390	7.0	0.003	0.004	2
02160513	1121	floor 10	<	0.1	< 0.009	0.009	na	<mda< td=""><td>33.8</td><td></td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>. 2</td></mda<>	33.8		0.07	0.390	7.0	0.003	0.004	. 2
02160512	1124	floor 15	<	0.1	< 0.010	0.010		<mda< td=""><td>35.8</td><td></td><td>0.08</td><td>0.390</td><td>7.0</td><td>0.004</td><td>0.004</td><td>2</td></mda<>	35.8		0.08	0.390	7.0	0.004	0.004	2
02170502 10	002 Lower Level	85	<_	0.6	< 0.032	0.032		<mda< td=""><td>121</td><td></td><td>0.25</td><td>0.390</td><td>7.0</td><td>0.012</td><td>0.014</td><td>2</td></mda<>	121		0.25	0.390	7.0	0.012	0.014	2
02170506 11	121 Lower level	B3	<	1.5	< 0.169	0.169		<mda< td=""><td>639</td><td></td><td>1.34</td><td>0.390</td><td>7.0</td><td>0.065</td><td>0.075</td><td>2</td></mda<>	639		1.34	0.390	7.0	0.065	0.075	2
	121 Lower level	B4	<	1.5	< 0.179	0.179		<mda< td=""><td>656</td><td></td><td>1.42</td><td>0.390</td><td>7.0</td><td>0.069</td><td>0.079</td><td>2 .</td></mda<>	656		1.42	0.390	7.0	0.069	0.079	2 .
02170503 ele	levator shaft floor	floor 2,5	<u> </u>	2.2	< 0.005	0.005		<mda< td=""><td>16.9</td><td></td><td>0.04</td><td>0.390</td><td>7.0</td><td>0.002</td><td>0.002</td><td>2</td></mda<>	16.9		0.04	0.390	7.0	0.002	0.002	2
02160514	Stairwell	floor 3	<	0.1	< 0.009	0.009	na	<mda< td=""><td>34.6</td><td>0.06</td><td>0.07</td><td>0.390</td><td>7.0</td><td>0.003</td><td>0.004</td><td>2</td></mda<>	34.6	0.06	0.07	0.390	7.0	0.003	0.004	2

#### Notes:

6.951

<sup>1)</sup> Floor survey areas are equivalent to 4 sq.ft. each. All nuclide activities are assumed to be distributed evenly within the area surveyed.

<sup>2) &</sup>lt; sign indicates a non-detect; value is below the MDA for that measurement.

<sup>3)</sup> Activity per gram values for each isotope are taken from TBD-00076, Activities for isotopes of Concern in Weapons Plutonium as a Function of Time, for 34 year old plutonium.

<sup>4)</sup> Am241 and Pu239 determinations are based on one of two cases listed below:

Case 1 - only Am241 was detected. Pu239/Pu240 is estimated based on a 34 year-old RFETS WgPu ratio of:

Case 2 - no Am241 or Pu239 peaks were detected. Results for Am241 are reported at the MDA, and Pu239 is determined from RFETS WgPu ratios.

#### PRE-DEMOLITION SURVEY FOR BUILDING 371

Survey Area: B Survey Unit: DOP B Classification: N/A Building: 371 Rooms: 1001,1002,11121,1121A,1123,1124,Elev #1 & Stair #6

Survey Unit Description: Floor Area Only

Total Area: 131 sq. m.

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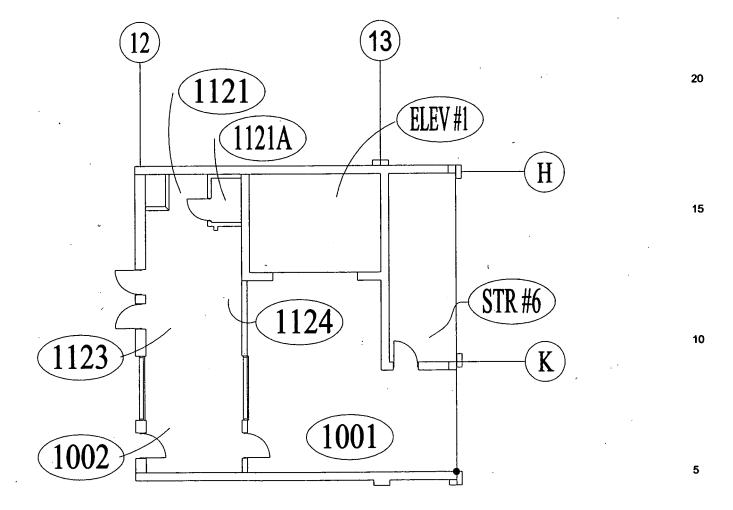
D C B

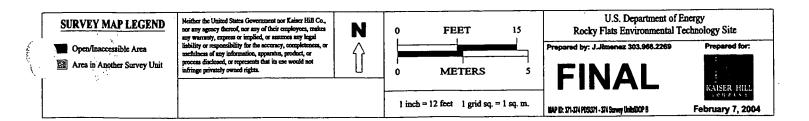
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Total Floor Area: 131 sq. m.

PAGE 1 OF 1

5 10 15 20 25 25





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#### Area "B"

Calculations based on methods from RE Calculation 04-RS-0041

If paint thicknesses are unknown enter .25

If paint thicknesses are
WGPu Areal Efficiency
Wall paint thickness =
Floor paint thickness =
Ceiling paint thickness =
Contamination Depth =
Density of Cement = 41 cpm m²/uCi Attenuation CF Wall Attenuation CF Floor Attenuation CF Ceiling 0.25 in 0.807 0 in 0.25 in 1.000 0.807 Cement Attenuation Factor Floor (Afc)= 1 cm 0.842

2.35 g/cm<sup>3</sup>

Weight of cement in 1m<sup>2</sup>= Survey Time = Meets 100 nCVg = 0.397 0.510 113 23500 g Average = Maximum = Number Samples = 0.5 min YES

ts 100 nCi/g =	YES			Number Samples =	113	
	Location (Enter	-				
	"f" for floor,		1		Corrected	
	"w" for wall, or			Attenuation CF	Areal	Surface
		Countr	СРМ	Paint	Efficiency	nCl/g
Survey Location	"c" for ceiling)	Counts				
F8	f	147	294	1.000	34,519	0.36
F9	f	162	324	1.000	34.519	0.40
F10		140	280	1.000	34.519	0.35
				1.000		
F11	f	99	198		34.519	0.24_
F12	f	161	322	1,000	34.519	0.40
F13	T 1	166	332	. 1.000	34.519	0.41
F14	f	194	388	1.000	34.519	0.48
F15	<del>       </del>	203	406	1.000	34.519	0,50
F16	<del>-                                     </del>	184	368	1.000	34.519	0.45
		183	366	1.000	34.519	0.45
F17	<del></del>	147	294	1.000	34.519	0.36
F18				1.000	34.519	0.34
G8		139	278			
G9	f	169	338	1.000	34.519	0.42
G10	f	137	274	1.000	34.519	0.34
G11	f	82	164	1.000	34,519	0.20
G12	f	169	338	1.000	34.519	0,42
G13	f	169	338	1.000	34.519	0.42
G14	f	174	348	1,000	34.519	0.43
G15	f	195	390	1.000	34.519	0.48
G16 ·	- 1	177	354	1.000	34.519	0.44
G17	<del> </del>	201	402	1,000	34,519	0.50
G18	<del></del>	182	364	1.000	34.519	0.45
H8	<del>-                                     </del>	148	296	1.000	34.519	0.36
H9	<del>-  -  -  -  -  -  -  -  -  -  -  -  -  -</del>	176	352	1.000	34.519	0.43
		149	298	1.000	34.519	0.37
H10	<del></del>		180	1.000	34.519	0.22
H11	f	90				
H12	f	157	314	1.000	34.519	0.39
H13		182	364	1.000	34.519	0.45
H14	f	191	382	1.000	34.519	0.47
H15	f	164	328	1.000	34.519	0.40
H16	f	180	360	1.000	34.519	0.44
H17	f	185	370	1.000	34.519	0.46
H18	f	186	372	1.000	34.519	0.46
18	f	170	340	1.000	34.519	0.42
. 19	f	179	358	1,000	34.519	0.44
110	1 7	164	328	1.000	34.519	0.40
111	+ +	82	164	1.000	34.519	0.20
112	<del></del>	169	338	1.000	34.519	0.42
113	<del></del>	158	316	1.000	34.519	0.39
			364	1.000	34.519	0.45
114	<del></del>	182				0.45
115	f	184	368	1.000	34.519	
116	f	170	340	1.000	34.519	0.42
117	f	158	316	1.000	34.519	0.39
, 118	f	160	320	1,000	34.519	0.39
. J8	f	165	330	1.000	34.519	0.41
J9	f	172	344	1.000	34.519	0.42
J10	1	203	406	1.000	34.519	0.50
J12	f	155	310	1.000	34.519	0.38
J13	f	181	362	1.000	34.519	0.45
J14	+ + +	188	376	1.000	34,519	0.46
J15	+ - ;	151	302	1.000	34.519	0.37
	<del>-                                    </del>	178	302 356	1.000	34.519	0.44
J16					34.519	0.45
J17	f	183	366	1.000		
J18	f	186	372	1.000	34.519	0.46
K8	f	145	290	1.000	34.519	0.36
К9	f	157	314	1.000	34.519	0.39
K10	f	176	352	1.000	34.519	0.43
, K12	f	161	322	1.000	34.519	0.40
K13	T T	159	318	1.000	34.519	0.39
K14	+ +	160	320	1.000	34.519	0.39

K16	· · ·	149	298	1.000	34.519	0.37
· K17	f ·	165	330	1.000	34.519	0.41
K18	f	156	312	1.000	34.519	0.38
L8	f	164	328	1.000	34.519	0.40
L9	f	192	384	1.000	34,519	0.47
L10	f	169	338	1.000	34.519	0.42
L12	1	113	226	1.000	34.519	0.28
L13	f	120	240	1.000	34.519	0,30
L14	f	115	230	1.000	34,519	0.28
L15	Ť	112	224	1.000	34.519	0.28
L16	<del>                                     </del>	183	366	1.000	34,519	0,45
L17	<del>                                     </del>	182	364	1,000	34.519	0.45
L18	f	123	246	1,000	34,519	0.30
M8		178	356	1.000	34,519	0.44
M9	<del>† 7</del>	181	362	1.000	34.519	0.45
M10	<del>                                     </del>	176	352	1.000	34.519	0.43
M12	<del></del>	190	380	1.000	34,519	0.47
M13	<del>}                                    </del>	142	284	1.000	34.519	0.35
M14	<del></del>	156	312	1.000	34.519	0.38
M15	<del> </del>	179	358	1.000	34.519	0.44
M16	<del>                                     </del>	155	310	1.000	34.519	0.38
M17	<del>                                     </del>	177	354	1.000	34,519	0.38
	<del> </del>	150	300	1.000	34,519	0.44
M18	<del>                                     </del>	207		1.000		0.51
N8			414 324		34.519	0.40
N9	f	162	324 356	1.000 1.000	34.519	
N10	f.	178			34.519	0.44
N12	[	127	254	1.000	34.519	0.31
N13	f	130	260	1.000	34.519	0.32
N14	f	165	330	1.000	34.519	0.41
N15	f	144	288	1.000	34.519	0.36
N16	f_	131	262	1.000	34.519	0.32
N17	f	178	356	1.000	34.519	0.44
N18	f	188	376	1.000	34.519	0.46
08		163	326	1.000	34.519	0.40
09	f	161	322	1.000	34.519	0.40
O10	f	167	334	1.000	34.519	0.41
O12		158	316	1.000	34.519	0.39
O13	f	152	304	1.000	34.519	0.37
014	f	157	314	1.000	34.519	0.39
015	f	145	290	1.000	34,519	0.36
O16	f	94	188	1.000	34.519	0.23
017	f	182	364	1.000	34.519	0.45
O18	f	199	398	1.000	34.519	0.49
P9	f	163	326	1.000	34.519	0.40
P10	f	171	342	1.000	34.519	0.42
P12	f	177	354	1.000	34.519	0.44
P13	f	149	298	1.000	34.519	0.37
P14	f	135	270	1.000	34.519	0.33
P15	1	154	308	1.000	34.519	0.38
P16	f	91	182	1.000	34.519	0.22
P17	f	155	310	1,000	34,519	0.38
P18	f	165	330	1.000	34.519	0.41



### **Rocky Flats Environmental Technology Site**

### **Building 371/374 Closure Project Characterization Plan**

**REVISION 0** 

**December 12, 2004** 

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### 1.0 INTRODUCTION

This Characterization Plan identifies the characterization and verification approach for portions of Building 371/374 that will undergo Pre-Demolition Survey, as well as areas that contain fixed areas of contamination (areas below six feet below final grade). The objective of this characterization plan is three-fold:

- (1) Ensure that building surfaces within six feet of final grade are decontaminated to appropriate release criteria (with exceptions for areas to be disposed as low-level waste).
- (2) Ensure that building surfaces within six feet of final grade that do not meet unrestricted release criteria are properly characterized for shipment as Surface Contaminated Objects (SCO).
- (3) Ensure the nature and extent of contamination in areas below six feet below final grade is adequately defined, and ensure the material that will be left in place is consistent with the framework for contaminated soil (as stated in the 371 Closure Project Decommissioning Operations Plan, Rev. 1, Modification 4 (DOP), dated December 12, 2003).

All building surfaces, including areas that remain in place after backfilling, will be characterized in accordance with this project-specific characterization package. This package has been prepared in accordance with the Decontamination and Decommissioning Characterization Protocol, Pre-Demolition Survey Plan, and the Industrial Area Sampling and Analysis Plan. The slab and structure within 0 to 6 feet of the final proposed grade will be decontaminated to unrestricted release criteria (or removed), and 0 to 3.5 feet will be removed during demolition. The Building 371/374 slab and structure below 6 feet of the final proposed grade will be decontaminated to ensure that it will not exceed 7 nCi/g (over depth of volume) and/or 100 nCi/g (surficial), averaged over 1m² (or removed). The described characterization methods are based on the Data Quality Objectives of the Pre-Demolition Survey Plan (PDSP) and the Industrial Area Sampling and Analysis Plan (IASAP)(DOE 2001a).

#### 2.0 CONTAMINANTS OF CONCERN

The contaminant of concern in Building 371/374 is weapons-grade plutonium, which consists primarily of Pu-239/240 and Am-241 (which is present as a result of ingrowth from the decay of Pu-241). These three isotopes represent over 98% of the total activity per gram of WGP. Uranium was also present in these buildings, to a lesser extent; however, transuranic limits are applied, conservatively, during radiological surveys. Alpha-only surveys are conducted for purposes of Pre-Demolition Survey, as documented in Technical Basis Document 00157, Basis for Performing Solely Alpha Contamination Surveys for Building 371/374, Revision 1, dated June 30, 2000. This Technical Basis Document is included in Attachment A.

### 3.0 APPROACH

B371/374 will be demolished in a "phased" approach that consists of five distinct phases. These phases are defined as follows:

Phase I - B374 Process Areas

Phase II - B374 Administrative Areas
Phase III - B371 Administrative Areas

Phase IV - B371 Process Areas (excluding process canyon rooms)

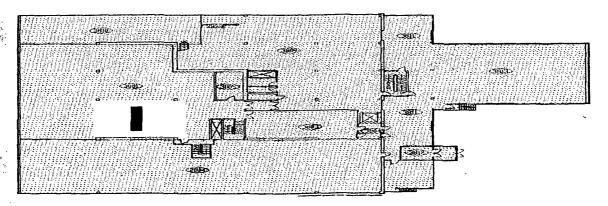
Phase V - B371 Canyon Rooms

This characterization plan addresses each phase of demolition. A summary map depicting each phase indicated above is included in Attachment B. In addition, the verification approach for areas greater than six feet below grade is addressed in Section 11.0.

### 4.0 PHASE I AREAS (B374 PROCESS AREAS)

Phase I of this plan consists of the B374 process areas. B374 was a process waste treatment facility. It consists of a main floor, basement, and mezzanine that housed tanks for receiving and storing liquid process wastes. It also included drum handling and storage areas, mechanical equipment areas, and utility areas. This area is a reinforced concrete structure located adjacent to the east side of B371. This phase includes areas above and below six feet below final grade.

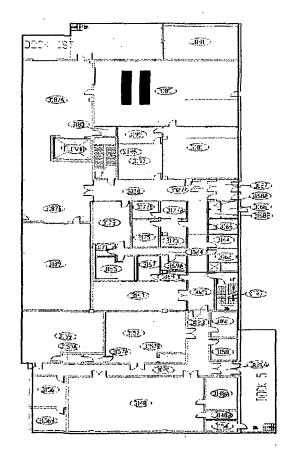
Building surfaces within six feet of final grade will receive radiological surveys consistent with PDSP requirements to the unrestricted release limit. Any paint left in place in Class I and Class II areas will be sampled (as process history deems necessary) to ensure no contamination exists in the paint. No media sampling will be required for areas in which remediation/paint removal has been conducted. Remaining systems/equipment that will remain for demolition will receive radiological surveys in accordance with 3-PRO-165-RSP-7.02, Contamination Monitoring Requirements. Potentially contaminated systems/equipment will be identified as a part of the characterization process and removed as low-level waste during demolition. This approach, when utilized, will be appropriately discussed in the applicable Pre-Demolition Survey Report (PDSR). Areas greater than six feet below final grade are discussed in Section 11.



### 5.0 PHASE II AREAS (B374 ADMINISTRATIVE AREAS)

Phase II of this plan consists of the B374 administrative areas as well as areas used for waste drum storage and movement. Phase II areas of the building housed administrative areas, drum handling/storage areas, mechanical equipment areas, and utility areas. This phase includes areas above and below six feet below final grade.

All building surfaces in Phase II will receive radiological surveys consistent with PDSP requirements to the unrestricted release limit. This includes areas greater than six feet below final grade. Since process history indicates that a majority of surfaces in Phase II areas greater than six feet below final grade have very low potential for contamination (mostly administrative / utility functions), these areas will also receive radiological surveys consistent with PDSP requirements. Any paint left in place in Class I and Class II areas will be sampled (as process history deems necessary) to ensure no contamination exists in the paint. No media sampling will be required for areas in which remediation / paint removal has been conducted. Remaining systems/equipment that will remain for demolition will receive radiological surveys in accordance with 3-PRO-165-RSP-7.02, Contamination Monitoring Requirements. Potentially contaminated systems/equipment will be identified as a part of the characterization process and removed as low-level waste during demolition. This approach, when utilized, will be appropriately discussed in the applicable Pre-Demolition Survey Report (PDSR).

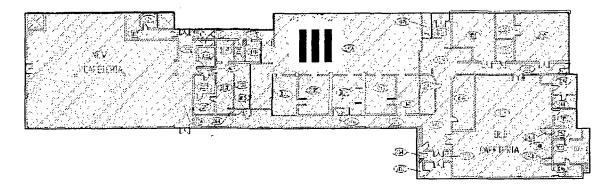


### 6.0 PHASE III AREAS (B371 ADMINISTRATIVE AREAS)

Phase III of this plan consists of the B371 administrative areas. Areas in Phase III housed mainly administrative areas and a cafeteria. In addition, this area included the electrical and maintenance support shops. This phase encompasses areas above six feet below final grade only.

Building surfaces within six feet of final grade will receive radiological surveys consistent with PDSP requirements to the unrestricted release limit. Any paint left in place in Class I and Class II areas will be sampled (as process history deems necessary) to ensure no contamination exists in the paint. No media sampling will be required for areas in which remediation/paint removal has been conducted. Remaining systems/equipment that will remain for demolition will receive radiological surveys in accordance with 3-PRO-165-RSP-7.02, Contamination Monitoring Requirements. Potentially contaminated systems/equipment will be identified as a part of the characterization process and removed as low-level waste during demolition. This approach, when utilized, will be appropriately discussed in the applicable Pre-Demolition Survey Report (PDSR).

Areas greater than six feet below final grade are discussed in Section 11.

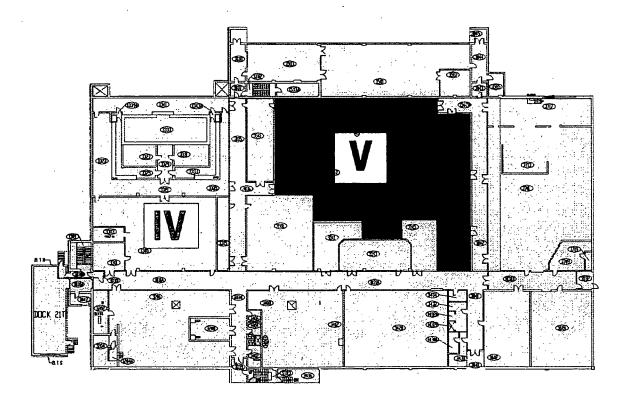


### 7.0 PHASE IV AREAS (B371 PROCESS AREAS)

Phase IV of this plan consists of the B371 process areas located in the attic, ground floor, basement, and sub-basement. Areas in Phase IV were the main areas for plutonium recovery. It contains four levels of reinforced concrete containing approximately 325,000 ft<sup>2</sup>. The sub-basement level consists of primarily the lower part of the CSV and maintenance bay, and small plutonium processing areas. The basement area housed the heating, ventilation, and air conditioning (HVAC) equipment and mechanical utilities, as well as the upper portion of the CSV and maintenance bay, and small plutonium processing areas. The ground floor contained the majority of the plutonium recovery processing equipment, including tanks and gloveboxes. The attic provided protected space for air distribution systems, chemical piping, electrical conduit, and motor generators. This phase includes areas above and below six feet below final grade.

Building surfaces within six feet of final grade will receive radiological surveys consistent with PDSP requirements to the unrestricted release limit. Any paint left in place in Class I and Class II areas will be sampled (as process history deems necessary) to ensure no contamination exists in the paint. No media sampling will be required for areas in which remediation/paint removal has been conducted. Remaining systems/equipment that will remain for demolition will receive radiological surveys in accordance with 3-PRO-165-RSP-7.02, Contamination Monitoring Requirements. Potentially contaminated systems/equipment will be identified as a part of the characterization process and removed as low-level waste during demolition. This approach, when utilized, will be appropriately discussed in the applicable Pre-Demolition Survey Report (PDSR).

Areas greater than six feet below final grade are discussed in Section 11.



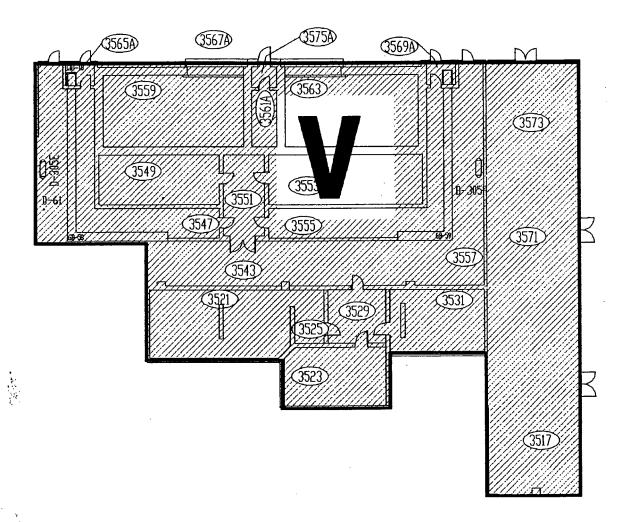
### 8.0 PHASE V AREAS (PROCESS CANYON AREAS)

Phase V areas include the oxide/residue tank vaults, ion exchange canyons/valve maintenance corridors, and the fluorination/reduction canyons. These areas will be disposed of as low-level waste and removed prior to and during demolition. Characterization of these areas will demonstrate the extent and magnitude of the existing radiological contamination prior to demolition. The final characterization of Phase V areas will include surveys on accessible floors, interior walls and ceiling surfaces. This final characterization will also include investigations of remaining imbedded piping to ensure waste acceptance criteria and Department of Transportation guidelines are met.

### Final characterization data will enable project personnel to:

- Finalize the work area controls required prior to / during the demolition to minimize potential dose to the immediate and collocated worker, the environment, and the public from exposure to DOE-added radioactive material
- Verify appropriate Waste Acceptance Criteria (WAC) for demolition debris are met.
- Model the emissions that could result from the demolition activity for the immediate and collocated workers, and the public.

An appropriate fixative (e.g., latex paint, 3M FireDam, etc.) will be applied to floor, wall, and ceiling surfaces to ensure that no removable contamination in excess of regulatory limits exists. Since significant amounts of radioactivity remain on floor surfaces, all floors will be remediated to SCO levels prior to the application of fixative. Wall and ceiling characterization efforts for Phase V areas reveal that these surfaces currently meet SCO criteria.



## 9.0 EXISTING CHARACTERIZATION DATA (AREAS BELOW 6 FT BELOW GRADE)

The locations of the existing random in-situ data were selected per the requirements of RSP-09.09, Radiological Characterization of Low Specific Activity Waste by Field Sampling and Analysis. This procedure describes a method to calculate conservative estimates of material activity concentration based on random sampling and calculation of the upper confidence limit (UCL<sub>95</sub>) of the mean concentration. The statistical evaluation also assumes a lognormal distribution with the intention of biasing results high to provide a high degree of confidence that no transportation or waste acceptance criteria is exceeded. However, because areas exceeding the specified limits have been identified through this sampling effort, no statistical evaluation of the existing data set was performed. However, a statistical evaluation will be performed for verification sample data, as described in Section 8.0.

The basement and sub-basement was treated as one characterization unit only to identify areas that may exceed specified DOP limits. Twenty-nine random *in-situ* measurements were collected in these areas. Fourteen additional biased *in-situ* measurements were collected in rooms or areas in which fixed contamination was supported by process history. Twenty-eight (28) paint samples were collected on the basement and sub-basement level of Building 371 as part of the Reconnaissance Level Characterization (RLC) effort. In addition, one hundred eighty (180) paint samples were taken in these areas in November 2003.

Additionally, seventy-one (71) *in-situ* data points were collected on structural walls and ceilings utilizing portable gamma detection instrumentation. None of these data points exceeded 100 nCi/g at the surface and/or 7 nCi/g averaged over the wall/ceiling depth. Excluding Rooms 1117 and 1125, the *in-situ* gamma detection data indicates the average volumetric activity is approximately 0.8 nCi/g for the slab and 0.02 nCi/g for the wall/ceiling surfaces, indicating that greater than 97% of the remaining activity exists in the slab. Therefore, verification scanning will only be completed on floors of these areas for purposes of DOP compliance. Data collected on the wall surfaces of Rooms 1117 and 1125 indicate contamination that is more evenly distributed. However, none of the data collected indicated fixed contamination in excess of DOP limits. Due to the process history and collected data results, floors, walls, and ceilings in Rooms 1117 and 1125 will be scanned for DOP compliance purposes. Summary maps and results (*in-situ* gamma spectroscopy) for the basement and sub-basement levels of Buildings 371/374 is presented in Attachment C.

### 10.0 POST-REMEDIATION SCANNING (> 6' BELOW FINAL GRADE)

Following the decontamination of the slab, where required, scans of the slab surfaces will be performed with a qualitative field instrument to verify that all areas in excess of 100 nCi/g, averaged over 1 m², have been remediated. Any area flagged as potentially greater than 100 nCi/g will either be remediated or verified to be less than this limit with a quantitative instrument (i.e., in-situ gamma-spectroscopy or laboratory sample analysis method).

### 11.0 VERIFICATION SAMPLING (> 6' BELOW FINAL GRADE)

Following completion of remediation activities and the collection of biased post-remediation data, an additional verification sampling effort will be performed on slab surfaces that will remain *in-situ* 6' below final grade. The objective is to verify with 95% confidence that the average slab activity is less than 100 nCi/g (surficial), averaged over 1 m², and 7 nCi/g (volumetric) Pu-239/240 and Am-241, and to provide an estimate of the average remaining slab activity. The locations of the random sample locations will be selected per a simple non-parametric statistical method (Sign Test) described in Section 8.3 of the MARSSIM manual (refer to Attachment D). Building 371/374 will be divided into six units, and 374 into one unit. Verification sampling survey areas are represented in Table 1 below.

Table 1
Verification Survey Areas (Slab Surfaces > 6' Final Grade)

Verification Survey Area ID Build		Description	Estimated Surface Area (m²)
A	374 Basement Areas		1150
В	371	Administrative Areas	1710
С	C 371 Plenum Areas		5450
D	371	Basement Process Areas	1000
. E	371	Sub-basement CSV	460
F	371	Sub-Basement Scrubber Canyons	100
G	371	Sub-Basement Process Areas	1600

The number of samples required will be based on standard deviation estimates derived from existing data, and verified to be adequate based on actual standard deviations. Refer to Attachment E for maps depicting Verification Survey Areas.

### 12.0 NON-RADIOLOGICAL CONTAMINANTS

The non-radiological contaminants of concern, including beryllium (Be), asbestos (ACM), poly-chlorinated bi-phenyls (PCBs), RCRA contaminants, including lead (Pb), will be evaluated per existing site requirements for demolition. This approach will be used in all areas of the building (above and below six feet below grade), excluding Phase V areas that are being disposed of as low-level waste. A discussion of each contaminant and path forward is provided below.

Beryllium will be evaluated per the requirements of the PDSP. Asbestos shall be removed and controlled per the requirements of Colorado Department of Public Health and Environment Regulation No. 8, Part B, and OSHA 29 CFR 1926.1101. PCB-based paints shall remain in place and the control measures outlined in the Risk-Based Approach memorandum (8EPR-F) shall be implemented during demolition. RCRA contaminants, including any RCRA closures, shall be evaluated per the requirements of the B371 DOP.

### 13.0 REPORTS

Upon completion of verification sampling, a final report shall be generated that includes the information described below.

- An overview map delineating decontaminated areas and post-remediation sample results
- The individual verification sample results and statistical evaluation (by survey unit).
- The average remaining activity (by survey area).
- The conclusion for each survey area.

### 14.0 REFERENCES

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

MAN-127-PDSP, Pre-Demolition Survey Plan for D&D Facilities, Revision 1, Golden, Colorado, July 15, 2002.

3-PRO-165-RSP-7.02, Contamination Monitoring Requirements, Revision 0, Golden, Colorado, February 17, 1998.

PRO-1564-RSP-09.09, Radiological Characterization of Low Specific Activity Waste by Field Sampling and Analysis, Revision 0, Golden, Colorado, 9/26/02.

Technical Basis Document 00157, Basis for Performing Solely Alpha Contamination Surveys for Building 371/374, Revision 1, dated June 30, 2000.

## **Attachment A**

TBD-00157, Basis for Performing Solely Alpha Contamination Surveys for Buildings 371/374

CLASSIFICATION/UCNI

### **Building 371 Technical Position Paper**

# Basis for Performing Solely Alpha Contamination Surveys for Building 371/374

Rev. 1

June 30, 2000

Prepared by:	97Bur	6/30/00
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Reviewed by:	LL Rands 371 Radiological Engineering	6/34/00 Date
Approved by:	Dy winder	4/30/00.
	Olyi Wirkus Radiological Safety Section Manager, 3/1	Tibra
Approved by:	W. M. Ruliene WG Zuppene Manager Radiation Protection	6/30/00 Date

# Building 371 Technical Position Paper Basis for Performing Solely Alpha Contamination Surveys For Building 371/374

### Rev. 1 June 30, 2000

### **PURPOSE**

This paper presents justification for performing radiological surveys for alpha activity only for release of material from Building 371/374. This justification is based on the isotopes present in the building, the ratio of alpha to beta activity and the respective release limits.

### BACKGROUND

Building 371 was put into operation in July of 1981. Process knowledge for Building 371 indicates that the primary isotopes used in the building are plutonium (Pu-238, Pu-239, Pu-240, Pu-241 and Pu-242) of varying enrichments, americium (Am-241), to a lesser degree uranium (U-234, U-235, and U-238) of varying enrichments, as well as all of the respective daughter products.

A minimal amount of tritium is present in building 371. Tritium is present only in sealed form. It is used by the passive-active drum counter within the zetatron tube for generation of neutrons. There have been no instances of leaking tubes. However, if a leak occurred, standard instrumentation would not detect the weak beta emissions.

The only other isotopes used in the building have been in the form of sealed sources (such as Sr/Y-90, Se-75, etc.). There have been no recorded instances of any leaking sealed sources.

Building 374 has a separate history. It has received wastes from other buildings. The waste has included both plutonium and uranium in varying enrichments/forms. Building 374 was designed as an aqueous waste treatment facility for treating chemically and/or radiologically contaminated aqueous waste. All potential waste transfers are required by procedure to have waste analysis performed, which includes total alpha, or gross alpha/beta, or g/l Pu, Am, and U, prior to consideration for transfer to Building 374 for treatment.

#### Regulatory Guidance

The regulations that govern occupational radiation protection at DOE facilities are contained in title 10 part 835 (10CFR835). These regulations were reviewed to ensure that performing surveys for alpha activity only would not result in a non-compliant situation.

10CFR835.401(c)(2) states, "Instruments used for monitoring and contamination control shall be....Appropriate for the type(s), levels, and energies of the radiation(s) encountered." 10CFR835.404(a) states: "Instruments and techniques used for radioactive contamination monitoring and control shall be adequate to ensure compliance with the sequinal specified in this section." A survey is defined in 10CFR835.2(a) as "an evaluation of the radiological conductive material or other potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. When appropriate, such an evaluation includes a physical survey of the location of radioactive material and measurements or calculations of levels of radiation, or concentrations or quantities of radioactive material present."

The RFETS Radiological Control Manual as well as DOE order 5400.5 establish the surface radioactivity limits. The applicable values are contained below in Table 1.

Table 1 - Summary of Contamination Values for Materials and Equipment (dpm/100 cm²)

Nuclide	Removable	Average Total (fixed + irenigvable)	Maximum Total (fixed + removable)
U-natural, U-235, U-238, and associated decay products	1,000	5,000	15,000
Transuranics	20	100	300
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above	1,000	5,000	15,000

Note: Where surface contamination by both alpha and beta-gamma emitting nuclides exists, the limits established for alpha and beta-gamma emitting nuclides apply independently.

### METHODOLOGY

This paper provides justification that beta measurements are unnecessary for many contamination surveys based on the fact that for material contaminated with plutonium, uranium or mixtures of both, the alpha activity release limit is more restrictive than the beta-gamma release limit. Because of the presence of plutonium in building 371, the transuranic release limits are routinely applied.

Technical Basis Document 00146, "Calculation of Beta Activity for Depleted Uranium, Highly Enriched Uranium and Aged Weapons Grade Plutonium" provides beta to alpha activity ratios for both plutonium and uranium. These ratios are summarized in Table 2 below.

Table 2 – Beta to Alpha Activity Ratios for Various Radionuclide Mixtures

Vaile	Various Radionacindo ivilizares				
Nuclide	Enrichment	Ratio of Beta to Alpha Activity			
Plutonium	5 yr old WGPu	3.7			
l	30 yr old WGPu	1.04			
Uranium	Depleted	1.8			
	HEU ·	0.03			

Things that can effect the ratio:

Some plutonium heat sources are/have been present in building 371. Some solutions may also be present for fabrication of standards. Due to the amount of Pu-238 present in heat source material, there is a much higher percentage of alpha activity versus beta activity in this type of material.

The only isotope with significant beta activity is Pu-241. The type of plutonium with the hignest quantity of Pu-241 would be reactor grade plutonium. The isotopic content of reactor grade Pu as reported in the "Guide of Good Practices for Occupational Radiation Protection in Plutonium Facilities", DOE-STD-1128-98 is

Pu-238	Pu-239	Pu-240	Pu-241	Pu-242
1.5%	58.1%	24.1%	11.4%	4.9%

Reactor grade plutonium was evaluated, although it is not believed that there is any reactor grade plutonium present. Reactor grade represents a "worst-case" situation from a beta activity standpoint. For reactor grade plutonium the betagamma activity exceeds the alpha by a factor of nearly 20. However, since the beta release limit is a factor of 50 times higher than the alpha limit, the alpha limit is still more restrictive.

Americium content can also effect the alpha to beta ratio. Much of the plutonium at RFETS contains americium. Some operations actually separated this from the plutonium. However, since Am-241 is an alpha emitter, for mixtures of Am/Pu, the americium content will increase the alpha activity relative to the beta activity.

### **EXAMPLES:**

Free Release: The worst case example for free release would be surveying an item for alpha contamination, using Pu limits and finding contamination just below the alpha release limit, when it turns out the item is contaminated with "fresh" WGPu, or depleted U:

	Measured Alpha A	ctivity(dpm/100 cm²)		
Nuclide	Removable	Total (maximum)		
Survey for "Pu"	19	299		
	Calculated Beta Activity (dpm/100 cm²)			
5 year old WGPu	70	1,100		
Depleted U	34	538		

This demonstrates that when using transuranic release limits, even in this situation, the beta activity is well below the beta release limits.

If an item were being surveyed using the uranium free release limits and it was found to be contaminated just below the alpha release limit:

	Measured Alpha Activity			
Nuclide	Removable	Total (maximum)		
Survey for "U"	999	14,999		
	Calculated Beta Activity			
5 year old WGPu	3,696*	55,496*		
Depleted U	1,798*	26,998*		
Enriched U	- 30	450		

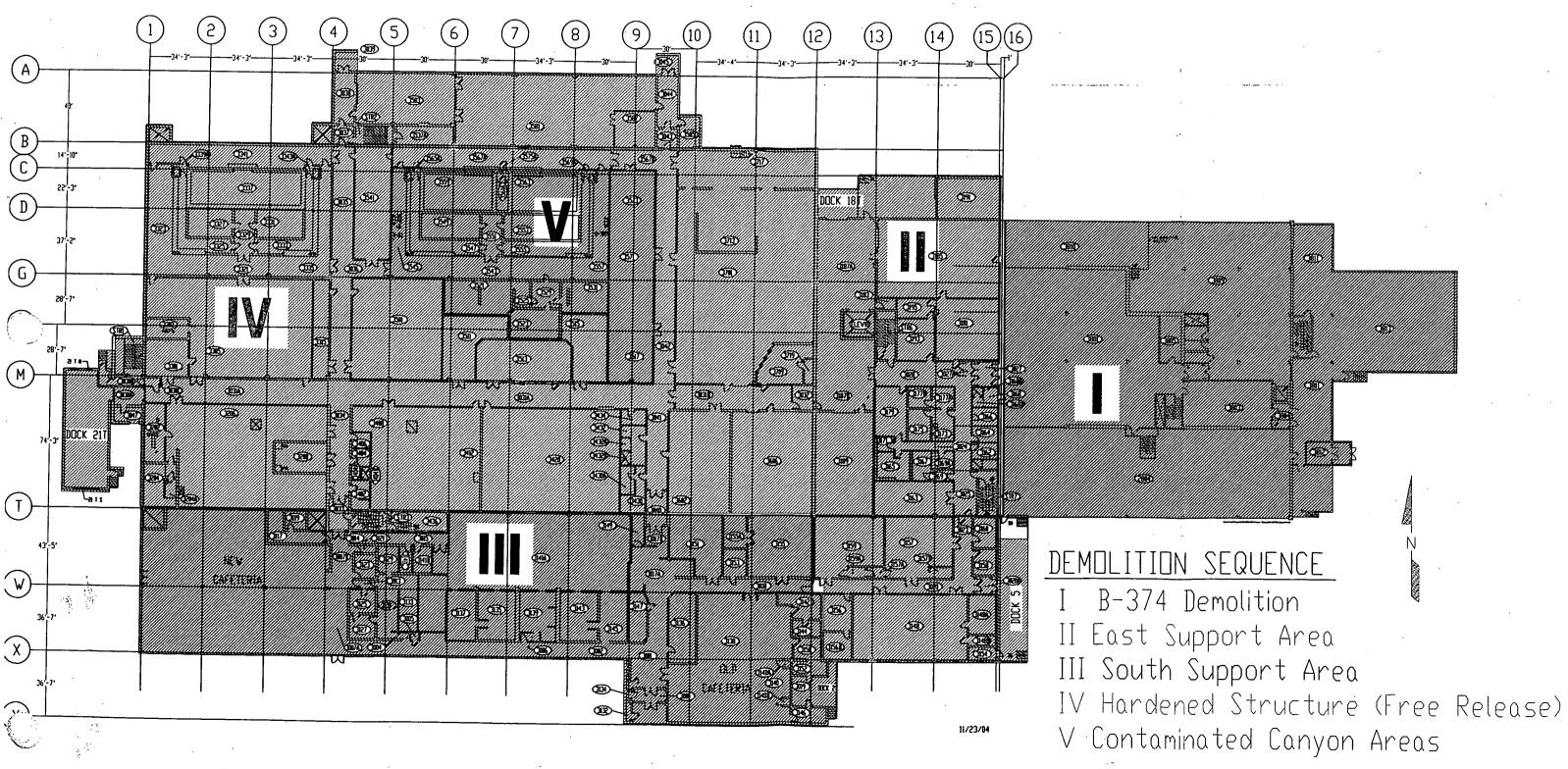
<sup>\* -</sup> Exceeds release criteria

If uranium release limits are used, then beta surveys must be performed unless it is known that the contamination is highly enriched uranium.

#### SUMMARY

Alpha contamination surveys may be used independently to adequately assess the radiological contamination of an area or item in building 371/374, provided that the transuranic contamination release limits are being used.

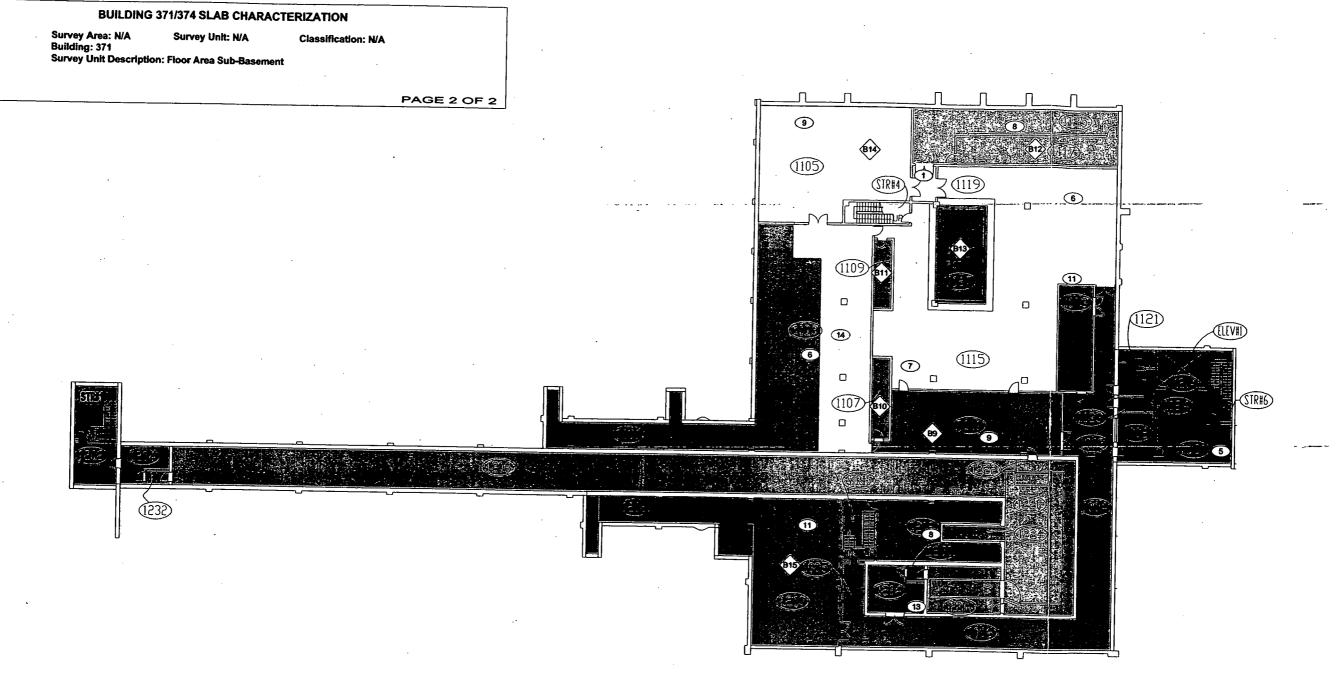
# BUILDING 371/374 DEMOLITION USING CONVENTIONAL METHODS



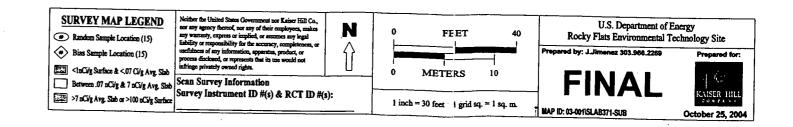
BUILDING 371/374 GROUNDFLOOR

# Attachment C

Summary Map and Characterization Results for B371/B374



# **BUILDING 371 SUB-BASEMENT**



### **BUILDING 371/374 SLAB CHARACTERIZATION**

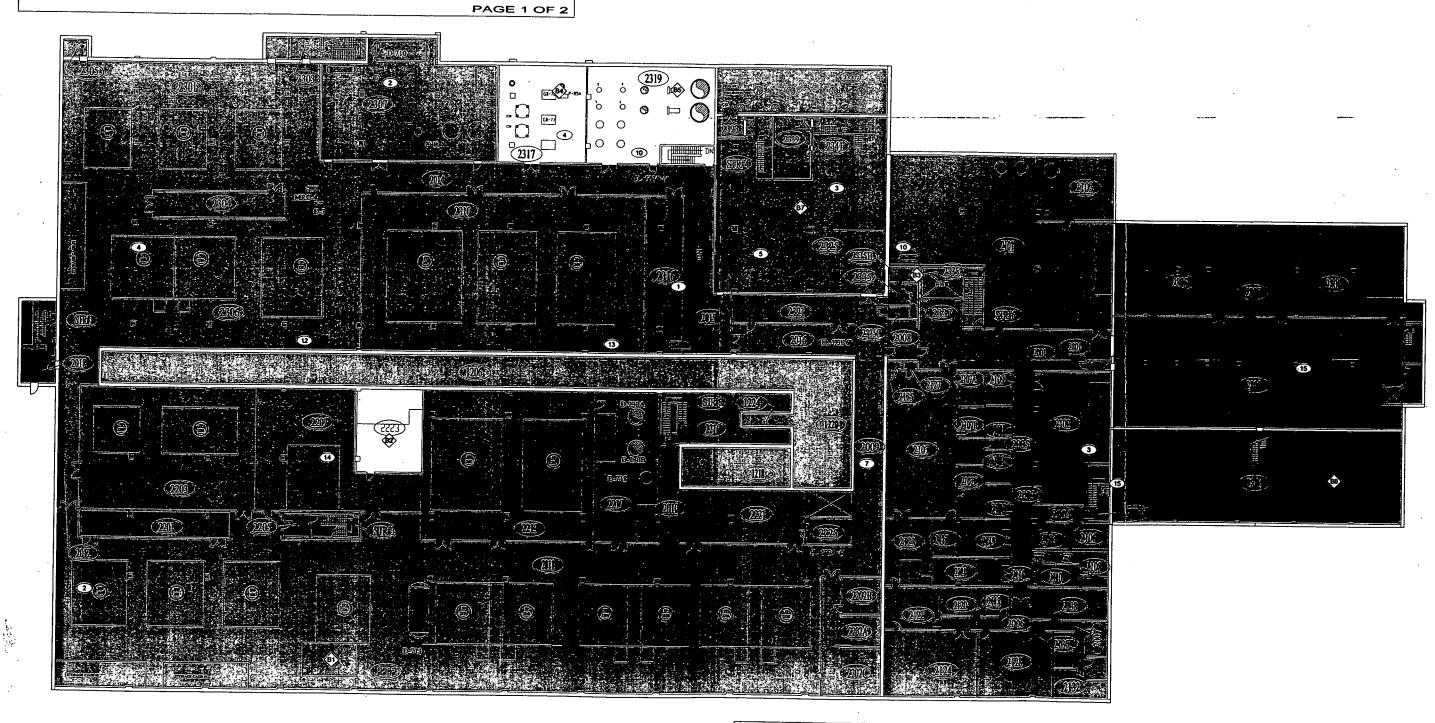
Survey Area: N/A Building: 371 Basement

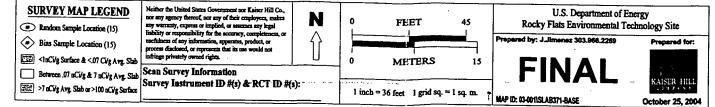
Survey Unit: N/A

Classification: N/A

Survey Unit Description: Floor Area of Basement

### **BUILDING 371/374 BASEMENT**





**Building 371 Floor Gamma Spec Survey Summary** 

Map/Room	Map ID		Total Surface Pu-239/240 + Am-241 (nCi/g)	Assumed Contamination Depth (inches)	Assumed Slab Thickness (inches)	Pu-239/240+Am- 241 Average Slab Activity Concentration (nCl/g)
Basement/1210	B15	L	4.79E-01	0.060	7.0	4.11E-03
Basement/1210	11	<		0.060	7.0	8.04E-04
Basement/1216	8		2.66E-01	0.060	7.0	2.28E-03
Basement/2009	7	$\perp$	1.88E-01	0.060	7.0	1.61E-03
Basement/2101	10	<	8.91E-02	0.060	7.0	7.63E-04
Basement/2102	3	<	1.16E-01	0.060	7.0	9.95E-04
Basement/2202	B1		3.32E-01	0.060	7.0	2.84E-03
Basement/2202	2	<	8.11E-02	0.060	7.0	6.95E-04
Basement/2205	14	٧	3.00E-01	0.060	7.0	2.57E-03
Basement/2223	B2		2.77E+00	0.060	7.0	2.37E-02
Basement/2306	12	П	5.26E-02	0.060	7.0	4.51E-04
Basement/2306	4		9.22E-02	0.060	7.0	7.91E-04
Basement/2307	2		6.81E-01	0.060	7.0	5.84E-03
Basement/2310	13		8.27E-02	0.060	7.0	7.09E-04
Basement/2316	1	٧	1.13E-01	0.060	7.0	9.68E-04
Basement/2317	4		4.35E+00	0.060	7.0	3.73E-02
Basement/2317	B4		2.18E+01	0.060	7.0	1.87E-01
Basement/2319	10	П	1.52E+00	0.060	7.0	1.30E-02
Basement/2319	B5		3.78E-01	0.060	7.0	3.24E-03
Basement/2325	5		8.67E-02	0.060	7.0	7.43E-04
Basement/2325	3	<	8.51E-02	0.060	7.0	7.29E-04
Basement/2325	B7		1.91E-01	0.060	7.0	1.64E-03
Basement/2335	B3	П	2.63E-01	0.060	7.0	2.26E-03
Basement/2801	15		8.98E-02	0.060	7.0	7.70E-04
Basement/2804	15		1.41E-01	0.060	7.0	1.21E-03
Basement/2804	B8		8.19E-02	0.060	7.0	7.02E-04
Sub-Basement/1001	5	<	9.30E-02	0.060	7.0	7.97E-04
Sub-Basement/1103	14	П	1.28E+00	0.060	7.0	1.10E-02
Sub-Basement/1103	6		3.57E-01	0.060	7.0	3.06E-03
Sub-Basement/1105	. 9	$\prod$	4.39E+01	0.060	7.0	3.76E-01
Sub-Basement/1105	B14		1.92E-01	0.060	7.0	1.65E-03
Sub-Basement/1107	B10	$\prod$	4.07E+00	0.060	7.0	3.49E-02
Sub-Basement/1109	B11		2.94E-01	0.060	7.0	2.52E-03
Sub-Basement/1111	9		1.63E-01	0.060	7.0	1.40E-03
Sub-Basement/1111	B9		2.33E-01	0.060	7.0	2.00E-03
Sub-Basement/1115	7		2.27E-01	0.060	7.0	1.95E-03
Sub-Basement/1115	11	$\coprod$	1.07E+00	0.060	7.0	9.20E-03
Sub-Basement/1115	6		7.80E-01	0.060	7.0	6.69E-03
Sub-Basement/1117	B12		1674E±045	0.060	7.0	F#149E402
Sub-Basement/1119	1	$\Box$	7.51E+01	0.060	7.0	6.43E-01
Sub-Basement/1125	8		2-24EE04	0.060		1/92E/02
Sub-Basement/1127 Pit	B13		7.29E-01	0.060	7.0	6.25E-03
Sub-Basement/1214	13		4.61E-02	0.060	7.0	3.95E-04

<1 and <0.07 nCi/g

Between 1 & 100 nCl/g and between 0.07 & 7 nCl/g

\$100 nCl/grot \$2 nCl/g and 
### Verification Survey Area Statistical Design

Survey Area: A Building:

### Survey Unit/Area Description:

B374 Slab Surfaces > 6 'Final Grade

Step 1: Calculate the relative shift  $\Delta/\sigma_s$ .  $\Delta/\sigma_s = (DCGL-LBGR)/\sigma_s$ 

where:  $\Delta/\sigma_s$  is the relative shift or the resolution of measurements in units of measurement uncertainty (MARSSIN recommends a value between 1 and 3).

DCGL is the derived concentration guideline value (7 nCi/g volumetric & 100 nCi/g surficial)

LBGR is the lower bound of the gray region - the lower bound of the range of values of the parameter of interest in a survey unit where the consequences of making a decision error is relatively minor. The LBGR is typically adjusted to obtain a relative shift between 1 and 3

σ<sub>s</sub> is the estimated standard deviation of sample measurements (MARSSIM recommends assuming a 30% coefficient of variation if scoping or characterization data is not available)

Step 2: Determine Sign P using the calculated relative shift and Table 4. Sign p is the estimated probability that a random measurement from the survey unit will be less than the DCGL, when the survey unit median is actually at the LBGR.

Step 3: Determine Decision Error Percentiles for Z1-α and Z1-β and the selected decision error levelsα and □. Typical (α) and (β) values used at RFETS are 0.05 and 0.05 respectively. This yields a Z1-α and Z1-β value of 1.645 and 1.645 respectively.

Step 4: Calculate Number of Data Points (N) for Sign Test using the following equation:

$$N = \frac{(Z_{1-\alpha} + Z_{1-\beta})^2}{4(Sign p - 0.5)^2}$$

$$N = (1.645 + 1.645)^2 / 4(Sign P - 0.5)^2$$

$$N = (1.645 + 1.645)^2 / 4(0.977250 - 0.5)^2 = 11.88$$

where:

1.645 is the alpha and beta decision error value (95% confidence) per the PDSP. Sign P equals 0.977250 for a relative shift of 2.0

Step 4. Increase N by 20% to allow for missing or invalid data points per MARSSIM, Section 5.5.2.3. N = 11.88 \* 1.2 = 14.25

Conclusion: A minimum of 15 measurements will required for each survey area.



DRAWING NOT TO SCALE

METERS

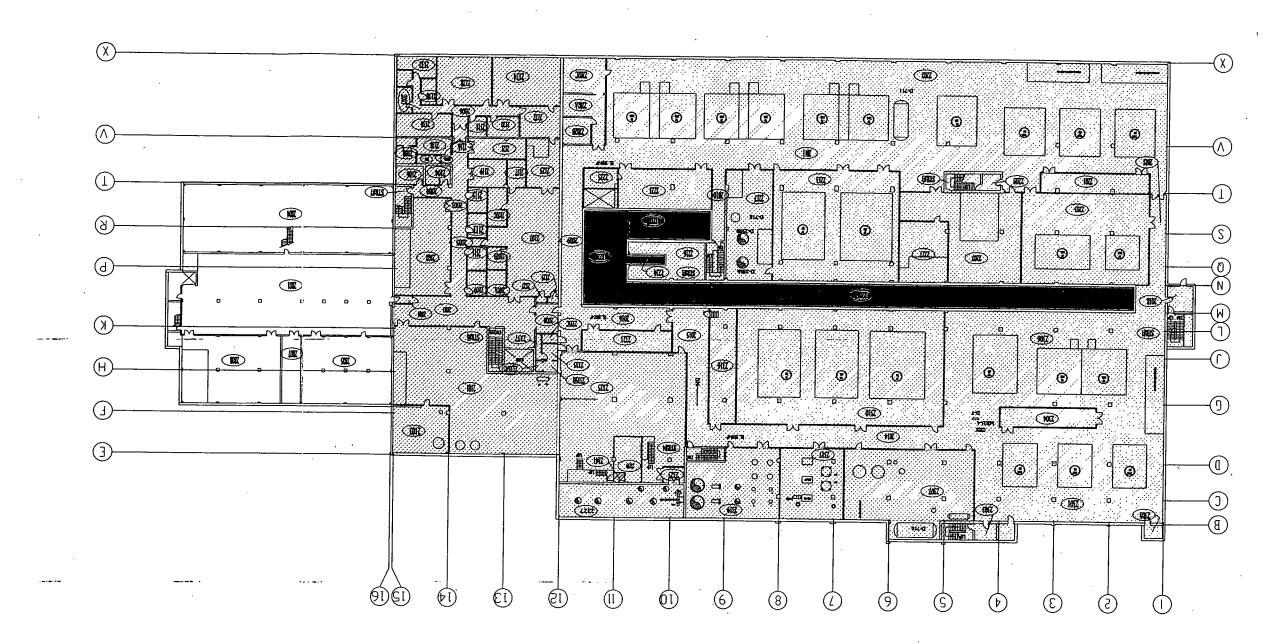
FEET

U.S. Department of Energy Site Rocky Flats Environmental Technology Site

BUILDING 371/374 DOP SURVEY AREAS

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SORVEY MAP LEGEND

Scan Survey Information

PRE-DEMOLITION SURVEY FOR BUILDING 371/374

BUILDING 371/374 DOP SURVEY AREAS

# BUILDING 371 SUB-BASEMENT FOR INFORMATION ONLY

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